

00142285

1/13/84

Branch

041401

Shaughnessy Number

Initiated: November 13, 1984
by E. E. Zucker

EEB CHEMICAL PROFILE

ECO DATA SUMMARY

EPTC

100 Fish and Wildlife Toxicology

100.1 Minimum Requirements

100.1.1 Avian Acute Oral LD₅₀

<u>Species</u>	<u>Test Material</u>	<u>Results</u>	<u>Category</u>	<u>Reference</u>
Bobwhite Quail	98.6%	LD ₅₀ > 2510 mg/kg	Core	Beaver (1984) 144-116

100.1.2 Avian Dietary LC₅₀

<u>Species</u>	<u>Test Material</u>	<u>Results</u>	<u>Category</u>	<u>Reference</u>
Bobwhite Quail	97%	10-day LC ₅₀ > 20,000 ppm	Core	Knott (1967)
Mallard Duck	98.6%	8-day LC ₅₀ > 5620 ppm	Core	Beavers (1984) 104-115

Formulations

Bobwhite Quail	Knoxweed 42	10-day LC ₅₀ ¹ > 20,000 ppm	Supple.	Knott (1967)
X Bobwhite Quail	Banvel + Eradicane 6.7 EC	8-day LC ₅₀ ¹ > 10,000 ppm	Supple.	Beavers (1978)
X Mallard Duck	Banvel + Eradicane 6.7 EC	8-day LC ₅₀ ¹ > 10,000 ppm	Supple.	Beavers (1978)

¹ Results given in terms of total formulation.

2009246

100.1.3 Fish Acute LC₅₀

<u>Species</u>	<u>Test Material</u>	<u>Results(mg/l)</u>	<u>Category</u>	<u>Reference</u>
Bluegill Sunfish	98.6%	96-hour LC ₅₀ 14.1 (10 to 24)	Core	McAllister (1984) 31562
Bluegill Sunfish	97.8%	96-hour LC ₅₀ 26.7 (24 to 32)	Core	Knott (1967)
Rainbow Trout	97.8%	96-hour LC ₅₀ 19.96 (10 to 24)	Core	Knott (1967)
Cutthroat Trout	98%	96-hour LC ₅₀ ² 17 (15 to 19)		Johnson (1980)
Lake Trout	98%	96-hour LC ₅₀ ² 16.2 (14.8 to 17.7)		Johnson (1980)

2 Test temperature 10°C

Formulations

Bluegill Sunfish	Knoxweed 42	96-hour LC ₅₀ ³ 24.8 (21.8 to 27.9)	Supple.	Knott (1967)
Bluegill Sunfish	Eptam 6E 77.1% (a.i.)	96-hour LC ₅₀ ⁴ 22.4 (18.2 to 24.2)	Supple.	McCann (1970)
Bluegill Sunfish	Eptam 6E	96-hour LC ₅₀ ³ 26.25 (24 to 32)	Supple.	Knott (1967)
Bluegill Sunfish	Banvel & Eradicane 6.7EC	96-hour LC ₅₀ ⁴ 449.06 (320 to 560)	Supple.	Kuc (1977)
Rainbow Trout	Knoxweed 42	96-hour LC ₅₀ ³ 21.84 (18.8 to 24.9)	Supple.	Knott (1967)
Rainbow Trout	2.3% (ai)	96-hour LC ₅₀ ⁴ >180	Supple.	McCann (1972)
Rainbow Trout	Eptam 6E	96-hour LC ₅₀ ³ 20.72 (18.69 to 22.67)	Supple.	Knott (1967)
Goldfish	2.3%(ai)	96-hour LC ₅₀ ⁴ >100	Supple.	McCann (1970)
Goldfish	Eptam 6E 77.1% (ai)	96-hour LC ₅₀ ⁴ 26.67 (24 to 32)	Supple.	McCann (1970)
Mosquito fish	Eptam 6E (77.1% (ai)	96-hour LC ₅₀ ³ 16.37 (13.7 to 19.1)	Supple.	Bullock (1968)

100.1.4 Aquatic Invertebrate LC₅₀

<u>Species</u>	<u>Test Material</u>	<u>Results (mg/l)</u>	<u>Category</u>	<u>Reference</u>
<u>Daphnia magna</u>	98.6%	48-hour LC ₅₀ 14.15 (11.9 to 16.8)	Core	Forbis (1984) 31563
<u>Gammarus fasciatus</u> (mature)	98%	96-hour LC ₅₀ 23 (15 to 36)		Johnson (1980)
<u>Asellus</u> (mature)	98%	96-hour LC ₅₀ 66		Johnson (1980)

Formulation

<u>Daphnia magna</u>	Banvel + Eradicane 6.7 EC	48-hour LC ₅₀ ⁴ 263.08 (218 to 316)	- Supple.	Vilkas (1977)
----------------------	------------------------------	--	-----------	---------------

3 Assumed that results are based on total formulation.

4 Results are based on total formulation.

101 General Toxicology

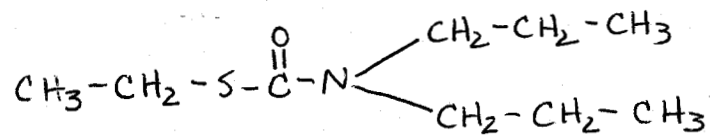
One-liners from the Toxicology Branch are attached.

102 Physical and Chemical Properties

102.1 Chemical Name

S-Ethyl dipropylthiocarbamate

102.2 Structural Formula



102.3 Common Name

EPTC

102.4 Trade Name

Eptam, Eradicane

103 Behavior in the Environment

103.1 Soil

The following information was extracted from the EAB document "Task 2: Environmental Fate and Exposure Assessment." Refer to the file for details.

"In summary, EPTC dissipates fairly rapidly in aerobic soil under laboratory, greenhouse, and field conditions with a half-life of <18 days. Laboratory experiments show CO₂ as a major degradate of EPTC in aerobic soils, with CO₂ evolution increased with temperature but decreased at low (3%) soil moisture content. Laboratory and field studies show greater EPTC degradation in soils with a prior history of EPTC treatment, than in soils with no prior history of EPTC treatment. EPTC is moderately to highly mobile in most mineral soils with mobility decreasing as soil CEC, clay content, and organic matter content increase. EPTC is relatively immobile in organic soils. The rapid dissipation of EPTC in soil is expected to greatly reduce any potential for ground water contamination; however, EPTC may contaminate surface waters via runoff from EPTC-treated fields. Soil incorporated applications should minimize exposure of workers to EPTC during reentry operations."

Study/Lab/Study #/Date	Material	EPA Accession No.	Results:	TOX Category	CORE Grade/ Doc. No.
			LD50, LC50, PIS, NOEL, LEL		
21-Day feeding - rat	Tech		Systemic NOEL > 326 mg/kg (single dose tested)		000945
90-Day feeding - rat	Tech		Systemic NOEL = 16 mg/kg Systemic LEL = 32 mg/kg (HDT; decreased female body weights; increased frequency of irregularity in hepatic cell size). Doses tested: 8, 10 and 32 mg/kg		000946
21-Day dermal - rabbit	6E (77.1% a.i.)		Systemic NOEL = 150 mg/kg (LDT) Systemic LEL = 300 mg/kg (HDT; body weight reduction) ChE NOEL = 150 mg/kg (LDT) ChE LEL = 300 mg/kg (HDT; erythro- cyte, brain and plasma ChE reduc- tion) Doses tested: 150 and 300 mg/kg		000946
105-Day feeding - dog	Tech		Systemic NOEL = 900 ppm Systemic LEL = 1800 ppm (HDT; gastric mucosal changes) ChE NOEL = 900 ppm ChE LEL = 1,800 ppm (HDT; brain cholinesterase inhibition) Doses tested: 450, 900, 1800 ppm		000946
Dermal sensitization - guinea pig	Tech		Not a sensitizer. (I.C. injections)		000945
Acute dermal LD50 - rabbit	Tech		LD50 = 10 gm/kg (Depressed righting reflexes, pro- stration and clonic convulsions - mortalities and toxic signs occurred only at the top doses) Doses tested: 2.51, 3.98, 6.31, 10 g/kg		000945

Tox Chem No. 435 ~ ETPAM

EPA
Accession No.

Results:
LD50, LC50, PIS, NOEL, LEL

TOX Category
CORE Grade/
Doc. No.

Study/Lab/Study #/Date	Material	Accession No.	LD50, LC50, PIS, NOEL, LEL	TOX Category	CORE Grade/ Doc. No.
Acute oral LD50 ~ rat	R-1608 (100% a.i.)		LD50 = 1.71 ml/Kg Salivation, ataxia, labored respiration, pain reflexes) Doses tested: 0.215, 0.464, 1.00, 2.15, 4.64 ml/Kg	III	000945
Acute dermal LD50 ~ rabbit	R-1608 (100% a.i.)		LD50 > 2.15 ml/Kg (Mild irritation and mild erythema, which subsided in 4-6 days; no mortalities) Doses tested: 1.00 and 2.15 ml/Kg	III	000945
Primary eye irritation ~ rabbit	R-1608 (100% a.i.)		Irritation, vascularization of the sclera and nictating membrane, edema, mild iritis and corneal opacity with clearing by day 4. Dose tested: 0.05 ml test material	II	000945
Acute oral LD50 ~ mice	Tech (99% a.i.)		LD50 = 3.16 gm/Kg Ataxia, labored respiration and lacrimation, clonic convulsions, ptosis) Doses tested: 213, 464, 1000, 2150, 4640 mg/kg	III	000945
Acute oral LD50 ~ dog	Tech (99% a.i.)		LD50 > 6.31 gm/Kg (HDT) (Emesis occurred at 1.59 gm/kg and above; no mortalities; excitability tremors, salivation, lacrimation) Doses tested: 1.59, 2.51, 6.31 g/kg by geletin capsule	III	000945
Acute oral LD50 ~ rat; Raltech Lab.; 8/9/79	87.8% a.i.		LD50 = 0.916 (0.616-1.247) gm/Kg (M) LD50 = 2.322 (1.962-2.658) gm/Kg (F) Sprague Dawley rats.	III	Guideline 000948

Study/Lab/Study #/Date	Material	EPA Accession No.	Results: LD50, LC50, PIS, NOEL, LEL	TOX Category	CORE Grade/Doc. No.
Acute dermal LD50 - rabbit; Raltech Lab.; 8/9/79	87.8% a.i.		LD50 > 2 gm/kg (single dose tested) (No mortalities) New Zealand white rabbits - 24 hour exposure.	III	Guideline 000948
Primary eye irritation - rabbit; Raltech Lab.; 8/9/79	87.8% a.i.		Corneal opacity in all animals (unwashed eyes) with clearing by day 7 in 5/6 animals. Dose tested: 0.1 ml test substance New Zealand and white rabbits	II	Guideline 000948
Primary dermal irritation - rabbit; Raltech Lab.; 8/9/79	87.8% a.i.		Erythema and edema were present in both intact and abraded sites - in 11/24 animals scores increased from 24 to 72 hours. Dose tested: 0.5 ml test substance - 24 hour exposure with New Zealand white rabbits.	III	Minimum 000948
Acute oral LD50 - rat	6E (77.1% a.i.)		LD50 = 1.59 gm/kg (male) LD50 = 1.36 gm/kg (female) (Depression and lacrimation at top 2 doses) Doses tested: 464, 1000, 2150 and 4640 u1/kg	III	000946
Acute dermal LD50 - rabbit	6E (77.1% a.i.)		LD50 > 4.64 gm/kg (HDT) (Severe erythema and edema, desquamation; no mortalities Doses tested: 1000, 4640 mg/kg	III	000946
Acute inhalation LC50 - rat	6E (77.1% a.i.)		LC50 > 31.5 mg/L/1 hour (HDT) (distress, lacrimation and ataxia, reddening and consolidation of the lungs; no mortalities) Doses tested: 7.2 and 31.5 mg/L	IV	000946

Study/Lab/Study #/Date	Material	EPA Accession No.	Results: LD50, LG50, PIS, NOEL, LEL	TOX Category	CORE Grade/Doc. No.
Primary eye irritation - rabbit; IRDC; 5/11/78	Banvel + Eradi - cane 6.7 EC	234449	Conjunctivitis but no corneal opacity (unwashed eyes). Conjunctivitis (washed eyes) Doses tested: 0.1 ml test substance New Zealand white rabbits	III	Guideline 000947
Primary dermal irritation - rabbit; IRDC; 5/11/78	Banvel + Eradi - cane 6.7 EC	234449	PIS = 0/8 Dose tested: 0.5 ml test substance 24 hour exposure in New Zealand white rabbits.	IV	Minimum 000947
Acute dermal LD50 - rabbit; IRDC; 5/11/78	Banvel + Eradi - cane 6.7 EC	234449	LD50 > 20 gm/kg (only dose tested) (Erythema and edema - no mortalities) New Zealand white rabbits.	IV	Minimum 000947
Acute oral LD50 - rat; IR&DC; 5/11/78	Banvel + Eradi - cane 6.7 EC	234449	LD50 > 5 gm/kg (Mottled kidneys, hydrometra of the uterus; No mortalities) Charles River rats.	IV	Minimum 000947