3-6-84
Supplemental
(used in registration Standard as "Core")

(TDR03R) DATA EVALUATION RECORD PAGE 1 OF

CASE GS0099 TPTH PM 400 01/25/83

CHEM 083601 Triphenyltin hydroxide

BRANCH EEB DISC 40 TOPIC 05054543

FORMULATION 00 - ACTIVE INGREDIENT

FICHE/MASTER ID 00086574 CONTENT CAT 01

Reinert, H.K.; Parke, G.S.E. (1975) Static 96 Hour Toxicity Study of Thompson Hayward Chemical Company Sample TH-TPTH in Bluegill Sunfish, Rainbow Trout and Fathead Minnows: Laboratory Nos. SE-6443 A through C. (Unpublished study received Oct 18, 1979 under 148-699; prepared by Cannon Laboratories, Inc., submitted by Thompson-Hayward Chemical Co., Kansas City, Kans.; CDL: 099053-G)

SUBST. CLASS = S.

DIRECT RVW TIME = (MH) START-DATE END DATE

REVIEWED BY: Les Touart
TITLE: Fisheries Biologist
ORG: EEB/HED
LOC/TEL:

SIGNATURE: Les Touart DATE: 3/6/84

APPROVED BY:
TITLE:
ORG:
LOC/TEL:

SIGNATURE: DATE:

083601

DATA EVALUATION RECORD

1. CHEMICAL: Du-Ter (Triphenyltin Hydroxide)

2. FORMULATION: N/A

3. CITATION: Reinert, H. and G. Parke (1975) Static 96-Hour Toxicity Study of Thompson Hayward Chemical Company Sample TH-TPTH in Bluegill Sunfish, Rainbow Trout and Fathead Minnows. Prepared by Cannon Laboratories, Inc. Submitted by Thompson-Hayward Chemical Company, Kansas City, KS [Acc. No. 099053]

4. REVIEWED BY: L.W. Touart
Fisheries Biologist
EEB/HED

5. DATE REVIEWED: 2/13/80

6. TEST TYPE: Fish Acute Toxicity Study (Warmwater and Coldwater)

A. TEST SPECIES: 1) Bluegill Sunfish 2) Rainbow Trout
3) Fathead Minnows

7. REPORTED RESULTS: The 96-hr LC_{50} of Triphenyltin Hydroxide was determined to be 0.0622 (0.0587-0.0678) ppm for Bluegill Sunfish, 0.0145 (0.0129-0.0162) ppm for Rainbow Trout and 0.0235 (0.0197-0.0280) ppm for Fathead Minnows.

8. REVIEWERS CONCLUSIONS: The study is scientifically sound but does not fulfill the requirements for acceptable fish acute toxicity studies for warmwater and coldwater fishes.

Materials/Methods

Test Procedures

The test protocol does not follow the EPA proposed guidelines of July 10, 1978. Specifically: Size of fish - between 35 and 75 mm in length and 0.5 to 3.0 grams in weight; Temperature - 19± 2°C for bluegill and minnows, 15 ± 2°C for trout; Acclimation - 10 days (charcoal filtered and aerated); number - 20/level; food - withheld 2 days prior to testing; test vessel - 20-liter all-glass aquaria containing 10 liters of chemically reconstituted water; test solution - dispensed into bioassay vessels in the form of a 0.01% (w/v) solution in acetone; observations - the number of fish surviving, general behavior, dissolved oxygen and pH were recorded for each concentration level at 6, 24, 48, 72 and 96 hours.

Statistical Analysis

LC_{50} determinations were calculated according to Litchfield, J.T., Jr. and Wilcoxon, F. (1949) A simplified method of evaluating dose-effect experiments. J. Pharm. and Exp. Therap. 96:99-113.

Discussion/Results

Bluegill Sunfish

Concentration (ppb)	No Dead/No. surviving affected/No. Tested			
	24 hr	48 hr	72 hr	96 hr
Control	0/0/20	0/0/20	0/0/20	0/0/20
Solvent Control	0/0/20	0/0/20	0/0/20	0/0/20
49	0/0/20	0/0/20	0/0/20	0/0/20
56	0/0/20	0/0/20	0/2/20	4/1/20
65	0/0/20	0/0/20	1/7/20	12/8/20
75	0/0/20	0/0/20	4/16/20	18/2/20
87	0/5/20	9/10/20	17/3/20	20/-/20

96-Hour LC_{50} = 62.2 ppb (58.7-67.8 ppb)

Rainbow Trout

Concentration (ppb)	No Dead/No. surviving affected, n = 20			
	24 hr	48 hr	72 hr	96 hr
Control	0/0	0/0	0/0	0/0
Solvent Control	0/0	0/0	0/0	0/0
8.7	0/0	0/0	0/20	0/2
10.0	0/0	0/0	0/20	2/18
13.5	0/0	0/20	2/18	6/14
18.0	0/0	0/20	2/18	16/
24.0	0/20	2/18	4/16	20/-

96-Hour LC_{50} = 14.5 ppb (12.9-16.2 ppb)

Fathead Minnow

Concentration (ppb)	No Dead/No. surviving affected, n = 20			
	24 hr	48 hr	72 hr	96 hr
Control	0/0	0/0	0/0	0/0
Solvent Control	0/0	0/0	0/0	0/0
10.0	0/0	0/0	0/0	0/2
13.5	0/0	0/0	0/0	0/5
18.0	0/0	2/0	2/3	6/0
24.0	0/0	2/0	4/10	8/12
42.0	2/18	14/6	18/2	20/-

96-Hour LC_{50} = 23.5 ppb (19.7-28.0 ppb)

Toxic signs observed in the above tests included abnormal respiration, partial loss of equilibrium and total loss of equilibrium.

Reviewer's Evaluation

A. Test Procedure

The test protocol does not comply with the recommended EPA 1978 protocol. The maximum allowable loading was exceeded. Also, the per cent active ingredient in the test material was not reported.

B. Statistical Analysis

The reported LC_{50} values were verified with Stephan's program. (See attached).

C. Discussion/Results

The reported LC_{50} values are acceptable.

D. Conclusions

1. Category: Supplemental
2. Rationale: The study did not follow recommended protocol.
3. Repairability: None.