

US EPA ARCHIVE DOCUMENT

TDMS _____

DATA EVALUATION RECORD

PAGE _____ OF _____

CASE GS _____

PM ____/____/____

CHEM 083601

TPTH

BRANCH EEB DISC. _____ TOPIC _____

FORMULATION _____ - ACTIVE INGREDIENT TECH.
97.3%

FICHE/MASTER 10 TOMOTROS CONTENT CAT _____

SUPRENTANT, D.C. et al. (1982) THE CHRONIC TOXICITY OF TRIPHENYLTIN HYDROXIDE (TPTH)
TO THE WATER FLEA (DAPHNIA MAGNA). UNPUBLISHED REPORT PREPARED BY E&G, BIONOMICS
FOR THOMPSON-HAWARD AGRICULTURE & NUTRITION CO., INC.

SUBST. CLASS = _____

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

REVIEWED BY: LES TOUART
TITLE: FISHERIES BIOLOGIST
ORG: EEB/HED
LOC/TEL: _____

SIGNATURE: LES TOUART

DATE: 2/15/84

APPROVED BY:
TITLE:
ORG:
LOC/TEL: _____

SIGNATURE: _____

DATE: _____

2027833

Just good!

DATA EVALUATION RECORD

1. CHEMICAL: Triphenyltin hydroxide
2. FORMULATION: Technical (97.3% a.i.)
3. CITATION: Suprenant, D.C., et al. (1982) The chronic toxicity of triphenyltin hydroxide (TPTH) to the water flea (Daphnia magna). Unpublished report prepared by EG&G, Bionomics for Thompson-Hayward Agriculture & Nutrition Company, Inc.
4. REVIEWED BY: Les Touart
Fisheries Biologist
EEB/HED
5. DATE REVIEWED: 5/4/83
6. TEST TYPE: Aquatic Invertebrate Life-cycle Toxicity Study
 - A. TEST SPECIES: Daphnia magna
7. REPORTED RESULTS: Survival of daphnids was significantly affected at exposure concentrations as low as 1.5 $\mu\text{g}/\text{l}$ TPTH. Survival and offspring production were unaffected among organisms exposed to TPTH concentrations as high as 0.77 $\mu\text{g}/\text{l}$. Based on these data, the minimum threshold concentration (MTC) of this compound for D. magna was $>0.77 < 1.5 \mu\text{g}/\text{l}$.
8. REVIEWERS CONCLUSIONS: The study is scientifically sound and does fulfill the guidelines requirement for an acceptable aquatic invertebrate life-cycle toxicity study. The study indicates a no-effect level of $<0.2 \mu\text{g}/\text{l}$ based on behavioral abnormalities.

Materials/Methods

Test Procedures

The test methods are consistent with current EPA Guidelines for conducting an aquatic invertebrate life-cycle toxicity study. Specifically: age at initiation of study - < 24 hrs; test vessels - 1.75 l aquaria; number tested - 20/aquaria, 80/level; test design - flow through, proportional diluter with syringe delivery; turover - 5 aquaria volumes per day; test duration - 21 days; temperature 22± 1°C; solvent - triethylene glycol.

Statistical Analysis

Survival data were transformed to arc sin percentage and these data and offspring production per female data were subjected to analysis of variance with Dunnett's procedure

Discussion/Results

<u>Mean Measured Concentration ($\mu\text{g}/\text{l}$)</u> <i>ppb</i>	% Survival of		
	<u>Day 7</u>	<u>Day 14</u>	<u>Day 21</u>
3.2	0	0	0
1.5	99	0	0
0.77	100	98	91
0.40	100	95	88
0.20	100	99	95
Solvent control	100	94	91
Control	99	95	94

<u>Mean Measured Concentration ($\mu\text{g}/\text{l}$)</u> <i>ppb</i>	<u>Mean Cumulative Offspring/Female</u>		
	<u>Day 7</u>	<u>Day 14</u>	<u>Day 21</u>
3.2	-	-	-
1.5	4	-	-
0.77	5	44	59
0.40	2	39	65
0.20	2	34	61
Solvent control	2	48	75
Control	2	43	69

The minimum threshold concentration was estimated to be >0.77 <1.5 $\mu\text{g}/\text{l}$. Organisms exposed to 0.2, 0.4 and 0.77 $\mu\text{g}/\text{l}$ for 20 days were responding behaviorally to the presence of TPTH by swimming erratically.

Reviewer's Evaluation

A. Test Procedures

The test generally followed EPA recommended procedures

B. Statistical Analysis

Appropriate to the data.

C. Discussion/Results

The no effect level of TPTH is <0.2 ~~µg~~/l based upon behavioral abnormalities.

D. Conclusions

Category: Core

Rationale: N/A

Repairability: N/A