

US EPA ARCHIVE DOCUMENT

5/21/1981

Data Evaluation Record

1. Chemical: P.T. No. 137-M (SYSTEM), *Copper Carbonate*
2. Formulation: ~~Unknown~~ *55.8% a.i.*
3. Citation: Four Day Fish Toxicity Study. Industrial Biotest Laboratory  
Report No. A-7625. 8/29/69.  
*MR10# R10C0P03*
4. Reviewed by: Carol M. Natella  
Wildlife Biologist  
Ecological Effects Branch, HED
5. Date Reviewed: May 27, 1981
6. Test Type: Fish acute 96-hour LC50
7. Reported Results: Bluegill - LC50 >10,000 ppm  
Rainbow Trout - LC50 >1,000 ppm
8. Reviewer's Conclusions: The study is invalid due to the fact that polyethylene  
liners were used in the test vessels.

## Materials/Methods

### Test Procedure

The procedure was generally the same for both bluegills and rainbow trout. Young fish with an average length of 35 to 75 mm were used as test animals. Bioassay vessels lined with disposable polyethylene bags were filled with ten liters of reconstituted water. Ten trout were placed in each vessel. In the case of the bluegills, only five fish were placed in each vessel, therefore two groups of five bluegills were tested at the selected concentration. "Maintenance" temperature was given as 13°C for rainbow trout and 24°C for bluegill; the fish were actually tested at 10°C and at 25-26°C, respectively. The test material was placed in the bioassay vessels as is. The lot of experimental fish was tested with a reference pesticide, p,p-DDT. This material was dispensed in the form of a 0.01% (W/V) solution in acetone.

### Statistical Analysis

The LC<sub>50</sub> for the positive control was determined by the Litchfield-Wilcoxon method.

### Discussion/Results

Bluegill: None of the bluegills exposed 96 hours at concentrations of 1,000 or 10,000 ppm died. The test material coated the fish slightly at both concentrations within the first 6 hours. No unusual reactions were noted.

Rainbow trout: None of the trout exposed at a concentration of 1,000 ppm died while all ten trout exposed at a concentration of 10,000 died within 48 hours. Slight surfacing was noted at both concentrations. At 1,000 ppm, the test material coated about 50% of the fish very slightly within the fish 6 hours. At 10,000 ppm, the test material coated the fish very heavily and after 48 hours 6 of the 10 dead fish were completely covered the bottom of the vessel.

Positive Control: p,p'-DDT. The LC<sub>50</sub> for both rainbow trout and bluegill is 0.028 ppm.

### Reviewer's Evaluation

#### A. Test Procedure

The test procedure does not comply with the recommended USEPA protocol in that polyethylene liners were used in the test vessels. Also, several discrepancies were noted in the supporting data during the audit of this study:

1. Comments regarding health, age and length as well as prestudy observation period cannot be verified from the raw data; information on weight was not provided.
2. The make-up of reconstituted water cannot be found in the raw data.
3. Test material concentration as well as positive controls is not supported by any calculations of weight or volume.
4. The concentration of dissolved oxygen (DO) in the vessel where mortality occurred was 9.0 instead of 8.0 as reported.
5. Several minor errors exist in the report concerning the reactions of the test organisms to the positive control material.

B. Statistical Analysis

Statistical analysis of the positive control data was not verified by the reviewer.

C. Conclusions

1. Category: Invalid
2. Rationale: Polyethylene liners were used in the test vessels. Certain pesticides have been shown to adsorb onto polyethylene. In addition, no information was provided concerning the weight of the test organisms.
3. Repairability: No

*Carol M. Natella 6/10/81*

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for

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