

US EPA ARCHIVE DOCUMENT

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FORMULATION:			IA	IB	T	FW	EC	R		
% a.i. Technical	SC#	CHEMICAL NAME Permethrin PP557	Validator: R. Balcomb		Date: Oct. 11, 1977					
			Test Type: Acute 96-hr. LC ₅₀ for Mirror Carp							
			Test ID # ES-F-2							

CITATION: Hill, R.W., Maddock, B.G., Hart, B., and Gilbert, J.L. "Determination of the Acute Toxicity of PP557 to Mirror Carp (Cyprinus carpio)." ICI Brixham Laboratory Report No. BL/B/1715 (June, 1976).

VALIDATION CATEGORY: Invalid

RESULTS: A. Statistical Data

The 24, 48 and 96-hour LC₅₀ values of PP557 were determined for Mirror Carp in freshwater at 23°C. A continuous flow-through bioassay system was used.

Toxic Levels Determined

- 24 hr. LC₅₀ = 0.098 mg/l
- 49 hr. LC₅₀ = 0.0385 mg/L
- 96 hr. LC₅₀ = 0.015 mg/L

A no effect level was established at 0.0033 mg/L. The ET₅₀ and LC₅₀ values were determined as previously described (ID # ES-G, ES-F-1).

B. Toxic Symptoms

The toxic symptoms noted in this study were spasmodic movement of the jaw which were uncontrolled and prolonged. A major difference between this study and previous reports on other species of fish was that no spinal curvature was observed in mirror carp.

The first symptoms became apparent in the 0.47 and 0.22 mg/L concentration within 35 minutes and death occurred at these concentrations in 380 and 410 minutes respectively.

Symptoms in the lower concentrations 0.1 mg/L and 0.047 mg/L occurred after about 1 hour exposure but the first deaths did not occur until 1020 and 1590 minutes respectively.

The fish exposed to 0.0068 mg/L of PP557 exhibited toxic symptoms, while in the test vessel and, after transfer to fresh water, symptoms were still apparent.

No toxic symptoms were recorded in the 0.0033 mg/L concentration.

VALIDATION CATEGORY/RATIONALE: This study was determined invalid for the following reasons: (1) Statistically derived best estimate of LC50 is not provided, including 95% confidence limits. (2) The ET50 values were plotted against the nominal concentrations of PP557 and not the measured concentrations. (3) Concentrations of toxicant in each treatment level is not 60% of the next higher one. In two instances, using measured concentrations, levels are approximately 1/3 of next higher level ($\frac{.2200}{.80}$, $\frac{.0244}{.0078}$).

CATEGORY REPAIRABILITY/RATIONALE: Not repairable. See item #3 in Validation Category/Rationale.