

US EPA ARCHIVE DOCUMENT

FORMULATION: 24 % a.p.i. SC # JFU 5054 Formulated Product CHEMICAL NAME Permethrin PP557	IA	IB	T	FW	EC	R			
	Validator:					Date:			
	Richard Balcomb					1/5/78			
	Test Type: Fish Acute 96-hr. LC ₅₀ : Warmwater								
Test ID.# ES-I									

CITATION: R.W. Hill et.al. Acute Toxicity of JFU 5054 to Bluegill Sunfish (Lepomis macrochirus). October 1977. BL/B/1832. ICI (Brixham Laboratory).

VALIDATION CATEGORY: Invalid

- RESULTS: (1) 96 hr. LC₅₀ = 0.0205 (0.019-0.022)mg/L Based on nominal concentrations.
- (2) 96 hr. LC₅₀ = 0.013 (0.011-0.016)mg/L Reviewer calculation - based on measured concentration.

Bluegill Sunfish were tested at 22°C in a flow-thru system. Twenty fish were used per level and concentration levels (7) ranged from 0.075 to 0.0075 mg/L.

No mortalities were observed at the 0.0155 to 0.0075 mg/L levels, however, toxic symptoms (jaw spasms/hyperactivity) were noted at the 0.0155 and 0.0135 mg/L levels.

The 96 hr-LC₅₀ determined by the reviewer was calculated using a Finney Probit Analysis program on a Texas Instruments programable calculator.

VALIDATION CATEGORY RATIONALE: The experimenter has measured the concentration of pesticide at each test level but has used the nominal concentration in the calculation of the LC₅₀ values. The experimenter claims that the emulsion properties of this formulation prevent adequate assay of the chemical in the test solutions. The reviewer has recalculated the 96-hr LC₅₀ using the measured concentration values, this result (0.013; 0.011-0.016) is considerably less than the result obtained using the nominal concentrations (0.0205 mg/L). Given the high toxicity of this chemical to aquatic organisms the Environmental Safety Staff believes that the validity of the 96-hr LC₅₀ estimate, provided by the registrant has not been adequately demonstrated.

TEST REPAIRABILITY: The study may be repaired by: (1) Providing addition data and/or references to support the contention that the nominal concentration values accurately indicate the exposure concentrations, or (2) Recalculating the LC₅₀ estimates using the measured concentrations, or (3) Accepting the 96-hr. LC₅₀ value calculated by the Environmental Safety Staff. This value was calculated by Finney Probit Analysis¹ and used the measured concentrations presented in Table 7 of the study.

¹Finney, D.J. 1952. Probit Analysis, 2nd ed. Cambridge University.