duplicate

VALIDATION SHEET CRF# _____ PAGE 22 OF ___

FORMULATION:			IA	IB	T	FW	EC	R		
% a.i.	SC#	CHEMICAL NAME	Validator: R. Balcomb			Date: Oct. 21, 1977				
Technical 89% a.i.		Permethrin PP557	Test Type: Acute 96-hr. LC_{50} for Fiddler Crabs and Brown Shrimp (Static)							
			Test ID # ES-L, N							

CITATION: Heitmuller, T. "Acute Toxicity of PP557 to Brown Shrimp (Penaeus aztecus) and Fiddler Crabs (Uca pugilator)." E.G.&G. Bionomics Report (May, 1977).

VALIDATION CATEGORY: A. Brown Shrimp Data: Core
B. Fiddler Crab Data: Supplementary

RESULTS:

A. Brown Shrimp

The calculated 96-hour LC_{50} for brown shrimp exposed to static, unaerated seawater was 0.34 ppb with 95% confidence limits of 0.23-0.51 ppb.

Nominal Concentration:	Control*	.09 ppb	0.16 ppb	0.29 ppb	0.50 ppb	0.89 ppb
24 hr. % mortality	0	0	0	10	10	100
48 hr. % mortality	0	0	0	20	50	100
96 hr. % mortality	0	0	0	50	80	100

* 10 shrimp per treatment level

The 48-hour LC_{50} was 0.38 ppb (0.26-0.57) and the 24-hour LC_{50} was estimated only as $0.50 < x < 0.89$. These results were confirmed by this reviewer via probit analysis:

96 hr. LC_{50} = .34 ppb (.26-.48)

B. Fiddler Crabs (Uca pugilator)

The calculated 96-hour LC_{50} for Fiddler Crabs tested in static, unaerated seawater was 2.2 ppb with 95% confidence limits of 1.4 to 3.5 ppb.

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(10 Crabs per treatment level)

Nominal Concentration: (ppb)	Control	0.5	0.89	1.6	2.9	5.0	8.9
24 hr. % mortality	0	0	0	10	40	50	60
48 hr. % mortality	0	0	0	20	50	50	100
96 hr. % mortality	0	0	10	40	50	60	100

The 24-hour LC_{50} was 5.3 (2.0-13.) and the 48-hour LC_{50} was 2.8 (1.9-4.4). The 96-hour LC_{50} was confirmed by this reviewer via probit analysis:

LC_{50} (96-hr.) = 2.65 ppb (1.68-4.16)

Reference

Stephan, Charles E. "Methods for Acute Toxicity Tests with Fish, Macroinvertebrates, and Amphibians," EPA-660/3-75-009, (1975).

VALIDATION CATEGORY/RATIONALE: The brown shrimp study is deemed core as methods adhere to guidelines and results were verified by probit analysis. The fiddler crab study is deemed supplementary as methods generally adhere to guidelines, results were verified by probit analysis, however, test species is not a recommended species (Stephan, 1975).

CATEGORY REPAIRABILITY/RATIONALE: A. Not applicable.
B. Not repairable.