111801
SHAUGHNESSEY NO.

REVIEW NO.

EEB BRANCH REVIEW

DATE: IN 4/23/81 OUT 4-30-81

FILE OR REG. NO. 10182-RO

PETITION OR EXP. PERMIT NO.

DATE OF SUBMISSION 4/14/81

DATE RECEIVED BY HED 4/20/81

RD REQUESTED COMPLETION DATE 8/5/81

EEB ESTIMATED COMPLETION DATE

RD ACTION CODE/TYPE OF REVIEW 121/New Chemical -- Conventional

TYPE PRODUCT(S): I, D, H, F, N, R, S Microbiocide

DATA ACCESSION NO(S). 244855

PROJECT MANAGER NO. A Castillo (32)

PRODUCT NAME(S) Baquacil

COMPANY NAME ICI Americas, Inc.

SUBMISSION PURPOSE Submission of data in support of Conditional registration

SHAUGHNESSEY NO.	CHEMICAL, & FORMULATION	% A.I.
111801	Poly(hexamethylene biquanide) hydrochloride	20

100 Pesticide Name

Baquacil

103 Submission Purpose

Submission of 96-hour LC50 for Rainbow Trout and Bluegill Sunfish in support of conditional registration.

101 Chemical and Physical Properties

101.1 Chemical poly (hexamethylene biquanide) hydrochloride

101.2 Common Name

Baquacil

103 Toxicological Properties

96-hour LC50 for Rainbow Trout and Bluegill Sunfish

105 Conclusion

The 96-hour fish study is scientifically sound with an LC50 of 4.4 ppm for rainbow trout and 0.91 ppm for bluegill sunfish. The 0.91 ppm of baquacil is highly toxic to bluegill and 4.4 ppm of baquacil is moderately toxic to rainbow trout. These studies meet the guideline requirements in support of the conditional registration for fish acute LC50's.

1. Chemical: Baquacil

2. Formulation: 20% (Technical a.i.)

3. Citation: Brown, D. (1981) 96-hour Acute Toxicity of "Vanlocil P" to Rainbow Trout; Study No. G 184/G; Prepared and submitted by ICI Ltd, Brixham, Devon TQ58BA

4. Reviewed By: Curtis E. Laird
Fishery Biologist
EEB/HED

5. Date Reviewed: 4-24-81

6. Test Type: 96 hour LC50

A. Test Species: Rainbow Trout

7. Reported Results:

The 96 hour LC50 was 4.4 ppm. There were no survivals at 5.6 ppm and above concentration; at concentration of 4.2 ppm 13 fish survived which showed signs of stress and gasping; at concentration og 3.2 ppm all fish survived under stress and gasping; at concentration of 2.4 ppm all fish survived under slight stress; and at concentration of 1.8 ppm all fish survived under no stress.

8. Reviewer's Conclusion:

This study indicates baquacil as being moderately toxic to rainbow trout. This study does meet the guideline requirements in support of conditional registration for fish acute LC50.

Material/Methods

Test Procedure

The test procedure generally complied with recommended EPA protocol of April 1975.

Statistical Analysis

Probit analysis

Discussion/Results

The LC50 value was 4.4 ppm. partial mortality only occurred at the 4.2 ppm concentration. One treatment other than the control must have killed or affected less than 35% of the test organisms exposed to it, and one treatment must have killed or affected more than 65% of the organisms as outlined in guideline of April 1975. The 7.05g exceeded the allowable 5.0g weight as outlined in guidelines of July 1978. However, considering the body of data for this compound, this study is considered acceptable.

Reviewer's Evaluation

A. Test Procedure

The test procedure generally complied with the recommended EPA protocol of April 1975.

B. Statistical Analysis

The statistic was verified with Stephan's computer program. Note that it is recommended, however, that: Only one partial mortality occurred in this study.

One treatment other than the control must have killed or affected less than 35% of the organisms exposed to it and one treatment must have killed or affected more than 65% of organisms.

C. Conclusion

1. Category: Core

2. Rationale: N/A

3. Repairability: N/A

1. Chemical: Baquacil

2. Formulation: 20% (Technical a.i.)

3. Citation: Sousa, J.V. (1981) Acute Toxicity of Vanlocil P To Bluegill; Report #BW-81-3-847; Prepared by EG&G, Bionomics for ICI Americas, Inc., Wilmington, Delware.

4. Reviewed by: Curtis E. Laird
Fishery Biologist
EEB/HED

5. Date Reviewed: 4-23-81

6. Test Type: 96 hour LC50

A. Test Species: Bluegill Sunfish

7. Reported Results:

The 96 hour LC50 value was 0.91 ppm.
The no effect level was < 0.24 ppm after 96-hour exposure.
After 96 hour exposure

PH	DO
6.7	4.5

All of the fish were respiring rapidly and swimming in an erratic mannner.

8. Reviewer's Conclusion:

This study indicates baquacil is highly toxic to bluegill. This study does meet the guideline requirements in support of registration.

Material/Methods

Test Procedure

The test procedure generally complied with the recommended EPA protocol of April 1975.

Statistical Analysis

Finney Probit

Discussion/Results

The 96 hour LC50 value was 0.91 ppm. There were no mortalities at concentration of 0.56 and 0.42 ppm and 10% mortality at 0.24 ppm. All mortalities were less than 35% of tested organisms. All of the fish were respiring rapidly and swimming in an erratic manner.

Reviewer's Evaluation

Test Procedure

The test procedure generally complied with the recommended EPA protocol of April 1975.

Statistical Analysis

The statistic was verified with Stephan's computer program.

Conclusion

1. Category: Core
2. Rationale N/A
3. Repairability: N/A

Curtis E. Laird 5-6-81

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