EBB

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SHAUGHNESSY NO.

REVIEW NO.

EEB BRANCH REVIEW

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

DATA ACCESSION NO(S).

PRODUCT MANAGER NO. G. LaRocca (15)

PRODUCT NAME(S) Permethrin/Cypermethrin

COMPANY NAME ICI Americas, Inc.

SUBMISSION PURPOSE Submission of aquatic laboratory studies protocols for review relative to DCI Notices of October 25, 1985.

SHAUGHNESSEY NO.	CHEMICAL & FORMULATION		% A.I.
109701	Permethrin		
109702	Cypermethrin		

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EEB REVIEW

Permethrin/Cypermethrin

100.0 Submission Purpose

ICI Americas, Inc. has submitted aquatic laboratory studies protocols for review relative to DCI Notices of October 25, 1985. These protocols are for the following studies: fish life cycle study (permethrin and cypermethrin); acute testing of mysid shrimp (permethrin); and mysid shrimp life cycle study (permethrin).

103.0 Conclusions

EEB has reviewed the protocols and has the following comments.

103.1 Fish Life Cycle Study

The protocol is based upon "Recommended Bioassay Procedure for Fathead Minnow, Pimephales promelas (Rafinesque) Chronic Tests, Revised 1972, EPA-670/4-73-001." The protocol is basically sound; however, the following changes and additions need to be made.

Item 10. The well water can be aerated before the water reaches the diluter system. Alternatively, the flow rates in the tanks can be maintained at a level high enough to keep the dissolved oxygen concentration equal to at least 60 percent of saturation.

Item 12.1. Will the eggs be water-hardened before they are distributed among the egg cups? Additional eggs from the same group as that used to begin the study are reserved for conducting a static acute toxicity test which is needed to determine an application factor. The 96-hour static test should be conducted when the fry are actively feeding, approximately 2 weeks after hatching.

Item 12.4. In addition to measuring total lengths of the fish on 30-days and 60-days posthatch, cumulative mortality on these days should also be recorded. The photographic method used to measure length should be described.

Item 14(c). The length of time to hatch should also be recorded.

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Item 15.4. The raw data must be submitted so that EEB can verify the results.

Additional Requirements - EEB requires that residue analyses be conducted on fish not selected for spawning, unused eggs, and F_1 generation fry. Further, it is required that parental fish and F_1 generation fry from the control and from the highest test concentration with adequate numbers of surviving fish/fry be placed into untreated water for 14 days to determine depuration rates. EEB recognizes that these residue analyses would require the use of radiolabeled test material. The protocol for the residue analyses must be submitted to us for our approval prior to initiating the study.

103.2 Acute Testing of Mysid Shrimp

This study will be conducted under continuous flow conditions. The protocol is basically sound; however, the following changes need to be made.

Item 1. The test organisms should be $\leq$ 24 hours old at the start of the exposure period. The species normally has molted once by 4 days.

If they are 4 to 6 days old at the start of the test, they will have molted a second time at the end of the 96-hour exposure period. This stage of development is too advanced and not as sensitive as newly-hatched mysids, which is the preferred stage.

Item 6.3. The following solvents are preferred: dimethyl formamide, ethanol, acetone, methanol, triethylene glycol.

103.3 Chronic Testing of Mysid Shrimp

This study will be conducted for 28 days under continuous flow conditions. The protocol is basically sound; however, the following changes need to be made.

Item 1. The test organisms should be newly-hatched mysids, $\leq$ 24 hours old.

Item 5. There should be at least four toxicant concentrations.

Item 6.3. The preferred solvents are listed above.

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Item 9.2. The toxicant concentrations should be analyzed at least once each week.

103.4 Summary

If the above comments are incorporated into the three protocols, EEB will accept these protocols.

Ann Stavola 7/8/86

Ann Stavola
Aquatic Biologist
Ecological Effects Branch
Hazard Evaluation Division

Douglas Urban 7/8/86

Douglas Urban
Head-Section IV
Ecological Effects Branch
Hazard Evaluation Division

M. Slimak 7/9/86

Michael Slimak
Chief
Ecological Effects Branch
Hazard Evaluation Division

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