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RECORD NO.

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SHAUGHNESSY NO.

119
REVIEW NO.

EEB REVIEW

DATE: IN 05/30/86 OUT 07/07/86

FILE OR REG. NO. 10182-18

PETITION OR EXP. PERMIT NO.

DATE OF SUBMISSION 05/13/86

DATE RECEIVED BY HED 05/28/86

RD REQUESTED COMPLETION DATE 06/30/86

EEB ESTIMATED COMPLETION DATE 06/30/86

RD ACTION CODE/TYPE OF REVIEW 601

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

COMPANY NAME ICI Americas, Inc.

SUBMISSION PURPOSE Registrant response concerning previous EEB review of estuarine mollusc study relative to Data Call-In Notice of 10/25/85.

ACC 096325 1977

SHAUGHNESSY NO.	CHEMICAL & FORMULATION	% A.I.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

FEB 1986

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: ICI Americas, Inc. Request for Data Waiver of the Oyster Embryolarvae Test for Permethrin (EPA Registration No. 10182-18)

FROM: Ann Stavola, Aquatic Biologist
Ecological Effects Branch
Hazard Evaluation Division (TS-769C)

TO: George LaRocca, PM 15
Insecticide-Rodenticide Branch
Registration Division (TS-767C)

THRU: Douglas Urban, Section Head
Ecological Effects Branch
Hazard Evaluation Division (TS-769C)

and

Michael Slimak, Chief
Ecological Effects Branch
Hazard Evaluation Division (TS-769C)

ICI Americas, Inc., has requested a waiver of the data requirement to conduct another estuarine mollusc acute toxicity study. The previously submitted oyster embryolarvae test which was filed August 25, 1977 (EPA Accession No. 096325), was determined in the Ecological Effects Branch (EEB) review of March 25, 1986, to not meet EPA Guideline requirements for an acute estuarine mollusc study. The registrant contends that the study is valid and fulfills the data requirement.

The issue of the acceptability of the study concerns the low water solubility of permethrin (< 0.3 mg/L). In order to increase the chemical's solubility, DMSO was used as a solvent at a concentration of 480 mg/L. Even with the addition of a solvent, permethrin still precipitated in the test vessels at nominal concentrations greater than 1.0 mg/L. There were no mortalities at any of the concentrations, and the EC_{50} was

determined to be greater than the highest test concentration of 4.8 mg/L (nominal concentration) or 1.05 mg/L (measured concentration).

The earlier EPA review stated that DMSO is not an approved solvent. However, it was a commonly used and approved solvent at the time (1977) this study was conducted. Therefore, use of this solvent does not invalidate the study.

EEB will accept this study and waive the requirement for a new estuarine mollusc study if the registrant will accept our conclusion that the EC_{50} value of permethrin to oyster embryolarvae is greater than 1.05 mg/L, based on the measured concentration. The measured concentration and not the nominal concentration of 4.8 mg/L must be used since the permethrin was only partially dissolved in the test vessels.

EEB's reasons for accepting this study as fulfilling the data requirement are: the solubility of permethrin is less than the reported EC_{50} value for oyster larvae (< 0.3 mg/L vs. > 1.05 mg/L), and the oyster value is considerably greater than the LC_{50} values for other aquatic organisms (*Daphnia* = 0.039 ug/L, rainbow trout = 9.8 ug/L, bluegill = 6.1 ug/L, pink shrimp = 0.354 ug/L, Atlantic silverside = 2.2 ug/L). EEB does not believe that any additional data can be gained by doing another oyster study.