

US EPA ARCHIVE DOCUMENT

184301
RECORD NO.

009001
SHAUGHNESSY NO.

REVIEW NO.

EEB REVIEW

DATE: IN 11/05/86 OUT 12/02/86

FILE OR REG. NO. 52904-C

PETITION OR EXP. PERMIT NO. _____

DATE OF SUBMISSION 07/21/86

DATE RECEIVED BY HED 10/29/86

RD REQUESTED COMPLETION DATE 12/26/86

EEB ESTIMATED COMPLETION DATE 12/26/86

RD ACTION CODE/TYPE OF REVIEW 660

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

DATA ACCESSION NO(S) 263944

PRODUCT MANAGER NO. G. LaRocca (15)

PRODUCT NAME(S) Lindane Products

COMPANY NAME Centre International d'Etudes du Lindane (CIEL)

SUBMISSION PURPOSE Submission of avian acute oral LD50 data
to support Registration Standard

SHAUGHNESSY NO.	CHEMICAL & FORMULATION	% AI
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

184303
RECORD NO.

009001
SHAUGHNESSY NO.

REVIEW NO.

EEB REVIEW

DATE: IN 11/05/86 OUT 12/02/86

FILE OR REG. NO. 52904-C

PETITION OR EXP. PERMIT NO. _____

DATE OF SUBMISSION 07/21/86

DATE RECEIVED BY HED 10/29/86

RD REQUESTED COMPLETION DATE 12/26/86

EEB ESTIMATED COMPLETION DATE 12/26/86

RD ACTION CODE/TYPE OF REVIEW 660

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

DATA ACCESSION NO(S). 263947

PRODUCT MANAGER NO. G. LaRocca (15)

PRODUCT NAME(S) Lindane Products

COMPANY NAME Centre International d'Etudes du Lindane (CIEL)

SUBMISSION PURPOSE Submission of acute aquatic toxicity
data to support Registration Standard

SHAUGHNESSY NO.	CHEMICAL & FORMULATION	% AI
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

184306
RECORD NO.

009001
SHAUGHNESSY NO.

REVIEW NO.

EEB REVIEW

DATE: IN 11/05/86 OUT 12/02/86

FILE OR REG. NO. 52904-C

PETITION OR EXP. PERMIT NO. _____

DATE OF SUBMISSION 07/28/86

DATE RECEIVED BY HED 10/29/86

RD REQUESTED COMPLETION DATE 12/26/86

EEB ESTIMATED COMPLETION DATE 12/26/86

RD ACTION CODE/TYPE OF REVIEW 660

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

DATA ACCESSION NO(S) 264036

PRODUCT MANAGER NO. G. LaRocca (15)

PRODUCT NAME(S) Lindane Products

COMPANY NAME Centre International d'Etudes du Lindane (CIEL)

SUBMISSION PURPOSE Submission of acute oyster toxicity data
to support Registration Standard

SHAUGHNESSY NO.	CHEMICAL & FORMULATION	% AI
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

12/2/86

Lindane

100 0 Submission Purpose and Label Information

100.1 Submission Purpose

The data from several acute toxicity tests with Lindane Technical and three Lindane Formulated products, 40% Flowable, 25% Wettable Powder, and 20% Emulsifiable Concentrate, were submitted in response to several data requirements established by the Lindane Registration Standard. These data requirements are:

1. Avian acute oral study with the technical grade using the bobwhite quail as the test species;
2. Acute toxicity testing of freshwater fish and invertebrates with formulated products used on pecans, and as soil and foliar treatments of crops; and
3. Acute toxicity testing of an estuarine mollusk (oyster) with the technical grade.

101.0 Hazard Assessment

101.1 Toxicity Data Reported in the Submitted Studies

101.1.1 Birds

<u>Species</u>	<u>Test Material</u>	<u>LD50 (mg/kg)</u>	<u>Validation Category</u>	<u>Accession Number</u>
Bobwhite	Tech, 99.5%	122(90-160)	Core	263944

101.2.2 Fish

<u>Species</u>	<u>Test Material</u>	<u>LC50 (ug/L)*</u>	<u>Validation Category</u>	<u>Accession Numbers</u>
Rainbow trout	25% WP	90(83-100)	Core	263948
Rainbow trout	40% Flow-able	69(50-80)	Core	263948
Rainbow trout	20% EC	120(80-150)	Core	263948
Bluegill	25% WP	200(170-250)	Core	263947
Bluegill	40% Flow-able	160(140-180)	Core	263947
Bluegill	20% EC	280(240-320)	Core	263947

101.1.3 Aquatic Invertebrates

<u>Species</u>	<u>Test Material</u>	<u>LC₅₀ (mg/L)*</u>	<u>Validation Category</u>	<u>Accession Numbers</u>
<u>Daphnia magna</u>	25% WP	6.3(4.8-8.4)	Core	263949
<u>Daphnia magna</u>	40% Flow-able	6.5(5.0-9.2)	Core	263949
<u>Daphnia magna</u>	20% EC	8.0(4.8-9.5)	Core	263949

101.1.4 Estuarine Species

<u>Species</u>	<u>Test Material</u>	<u>LC₅₀ (mg/L)</u>	<u>Validation Category</u>	<u>Accession Number</u>
Eastern oyster embryo-larvae	Tech., 99.5%	2.8(2.6-3.0)	Suppl.	264036

* The LC₅₀ values are based on the measured formulation and are not corrected for the active ingredient.

101.2 Likelihood of Adverse Effects to Nontarget Organisms

The data listed above indicate that Technical Lindane is moderately toxic to upland game birds and oysters. The three formulations tested are highly toxic to warmwater fish but only moderately toxic to cladocerans. The 20% EC formulation is highly toxic to coldwater fish, whereas the 25% WP and 40% Flowable are very highly toxic.

There are still outstanding EEB data requirements including the avian choice feeding test, the fish early life stage test, the invertebrate life cycle study and the aquatic organism accumulation study. The aquatic residue monitoring study was submitted but has not yet been reviewed. We need the results from these studies and the environmental chemistry data that are still outstanding before completing the risk assessment.

101.4 Adequacy of Toxicity Data

The acute oral study on bobwhite quail (EPA Accession No. 263944) and the acute toxicity studies on bluegill, rainbow trout, and Daphnia magna (EPA Accession Nos. 263947, 263948, and 263949, respectively) were determined to be scientifically sound and to meet EPA Guidelines requirements for acute toxicity testing.

The acute toxicity test on eastern oyster embryo-larvae was determined to be scientifically sound but does not meet the EPA Guidelines requirement for acute toxicity testing with an estuarine species. The raw data for the larvae counts for each replicate beaker are needed to verify the statistical analysis. Upon receipt of the raw data the study will be reevaluated, and if the data are determined to be valid, the study can fulfill the data requirement.

103.0 Conclusions

Rhone-Poulenc, Inc. submitted a number of acute toxicity tests on bobwhite quail, freshwater fish and invertebrates and an estuarine mollusk that were required by the Lindane Registration Standard, September 1985.

All the studies except the test on the eastern oyster were determined to fulfill the data requirements. The deficiency of the oyster study is explained in Section 101.4 "Adequacy of Toxicity Data" above. If the missing data are submitted and determined to be valid, the study can fulfill the data requirement.

As explained in Section 101.2 of this review, the risk assessment for Lindane will not be completed until the remaining data requirements are fulfilled.

Ann Stavola 9 Dec 86

Ann Stavola
Aquatic Biologist
Ecological Effects Branch
Hazard Evaluation Division

Douglas J Urban 12/31/86
Doug Urban
Section Head
Ecological Effects Branch
Hazard Evaluation Division

Michael Slinak 1/2/87
Michael Slinak
Chief
Ecological Effects Branch
Hazard Evaluation Division