Shaughnessy #: 079401

EFB Logout Date: 18 APR 1984

Init.: ff for SC

To: George La Rocca
Product Manager #15
Registration Division (TS-767)

From: L.A. Richardson, Chief
Environmental Chemistry Review Section #3
Exposure Assessment Branch
Hazard Evaluation Division (TS-769c)

Attached please find the EAB review of...

Reg./File No.: 11678-5

Chemical: Endosulfan

Type Product: I

Product Name: Makhteshim-Agan Inc.

Company Name: Response to RS (Adsorption/Desorption Study)

Submission Purpose:

ZBB Code:

ACTION CODE: 655

Date In: 2/28/84

EFB # 4212

Date Completed: 4/16/84

TAIS (level II) Days

42 1

Deferrals To:

_____ Ecological Effects Branch

_____ Residue Chemistry Branch

_____ Toxicology Branch

Reviewer: Patricia Ott

Patricia Ott

Endosulfan Adsorption/Desorption Study

Reference: Hoe 002671, adsorption/desorption in the soil/water system, submitted by Makhteshim-Agan Inc. Corporation. EPA Reg. No. 11678-5, cover memo dated January 9, 1984.

Conclusions:

This study partially fulfills the leaching requirement by providing information for adsorption/desorption for the parent compound, endosulfan. Endosulfan binds strongly to two sands (K_d 29-72) and a sandy loam (K_d = 33) containing from 0.8% to 2.58% organic carbon. Desorption was $\leq$ 3%.

This study does not completely fulfill the registration requirement for the following reasons:

1. Workers failed to provide adsorption coefficients (K_d) for degradates.

2. No K_d values for parent and degradates were provided for an aquatic sediment, which is required for the aquatic food use (watercress).

Materials and Methods:

Four concentrations of radiolabeled endosulfan in a 0.01 M $CaCl_2$ solution were equilibrated with each of three soils: two sands and a sandy loam. After centrifugation, the water phase was analyzed by liquid scintillation counting.

Reported Results:

	K_d Soil/Water (22°C)	K_{oc} Soil/Water (22°C)
Sand (0.8% org. C)	29±8	3600±1000
Sand (2.58% org. C)	72±20	2800±800
Sandy Loam	33±7	3300±700

Concentration range: 0.04 umol-1.04 umol/l
Desorption: <3% K_{des} 7xK)

Discussion:

1. Two of the three soils selected were sands. Sand is an acceptable soil for one soil, as well as the sandy loam, which was the third soil studied. Instead of a second sand, another soil type, such as clay or clay loam should have been chosen. However, since endosulfan adsorbs appreciably to sand, this objection is not critical for endosulfan.

2. It is not good laboratory practice to evaporate pesticide samples to dryness because losses can occur, unless oil/fat is present.

REGISTRATION DIVISION DATA REVIEW RECORD

Confidential Business Information – Does Not Contain National Security Information (E.O. 12065)

1. CHEMICAL NAME: ENDOSULFAN

2. IDENTIFYING NUMBER	3. ACTION CODE	4. ACCESSION NUMBER	TO BE COMPLETED BY PM
11078-5	655	252227	5. RECORD NUMBER: 116.323
			6. REFERENCE NUMBER: 10
			7. DATE RECEIVED (EPA): 1/16/84
			8. STATUTORY DUE DATE: —
			9. PRODUCT MANAGER (PM): LaRocca
			10. PM TEAM NUMBER: 15

14. CHECK IF APPLICABLE

- ☐ Public Health/Quarantine
- ☐ Minor Use
- ☐ Substitute Chemical
- ☐ Part of IPM
- ☐ Seasonal Concern
- ☐ Review Requires Less Than 4 Hours

WSD

. TO BE COMPLETED BY PCB

11. DATE SENT TO HED/TSS: 2/28/84

12. PRIORITY NUMBER: 20

13. PROJECTED RETURN DATE: 4/28/84

15. INSTRUCTIONS TO REVIEWER

A. HED
- ☐ Total Assessment - 3(c)(5)
- ☐ Incremental Risk Assessment - 3(c)(7) and/or E.L. Johnson memo of May 12, 1977.

B. ~~SPRD~~ ~~(Send Copy of Form to SPRD PM)~~
- ☐ Chemical Undergoing Active RPAR Review
- ☑ Chemical Undergoing Active Registration Standards Review

C. ☐ BFSD
D. ☐ TSS/RD
E. ☐ Other

F. INSTRUCTIONS

Reg. Standard - adsorption - desorption soil/water

16. RELATED ACTIONS

Acc. Nos 252184, 252184

17. 3(c)(1)(D)

- ☑ Use Any or All Available Information
- ☐ Use Only Attached Data
- ☐ Use Only the Attached Data for Formulation and Any or All Available Information on the Technical or Manufacturing Chemical.

18. REVIEWS SENT TO

- ☑ TB
- ☑ EEB
- ☐ EF
- ☑ PL
- ☐ RCB
- ☑ EFB
- ☐ CH
- ☐ BFSD

19. To	TYPE OF REVIEW	NUMBER OF ACTIONS: Registration	Petition	EUP	SLN	Sec. 18	Inert	MNR. USE	Other
HED	TOXICOLOGY								
HED	ECOLOGICAL EFFECTS								
HED	RESIDUE CHEMISTRY								
HED	ENVIRONMENTAL ~~DATE~~ A,B								
RD/TSS	CHEMISTRY								
RD/TSS	EFFICACY								
RD/TSS	PRECAUTIONARY LABELING								
BFSD	ECONOMIC ANALYSIS								

20.	21.	22.	23.	24.
☐ Label Submitted with Application Attached	☐ Confidential Statement of Formula	☐ Representative Labels Showing Accepted Uses Attached	Date Returned to RD (to be completed by HED)	Include an Original and 4 (four) Copies of This Completed Form for Each Branch Checked for Review.

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