

US EPA ARCHIVE DOCUMENT

Shaughnessy #: 058201

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Init: JM

To: Michael McDavit
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Registration Division (TS-767C)

From: Joseph C. Reinert, Chief
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Exposure Assessment Branch
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JCR

Attached please find the EAB review of...

Reg./File No.: _____

Chemical: Chlordane

Type Product: Termiticide

Product Name: Gold Crest Termide®

Company Name: _____

Submission Purpose: Air Monitoring Study - Interim Report

Date In: 04/10/86

ACTION CODE: _____

Date Completed: 07/08/86

EAB # 6499 6511

Days

Deferrals To:

6

_____ Ecological Effects Branch

_____ Residue Chemistry Branch

_____ Toxicology Branch

_____ Benefits and Use Division

Monitoring study requested by EAB

Monitoring study voluntarily conducted by registrant:

1.0 INTRODUCTION

In February 1984 the Agency issued a Data-Call-In Notice for the determination of air concentrations of chlordane and heptachlor in homes treated with these compounds for subterranean termites. The registrant, Velsicol Chemical Corporation, responded with a protocol for an indoor air monitoring study. The protocol, after several revisions, was approved by EAB on 1 July 1985. The current submission (Record Number 17115, Identification No. 058201, Accession No. 262190) is an interim report on the first 90 days of the study.

2.0 DESCRIPTION OF STUDY

The study was conducted in Missouri and Texas. At each location 10 houses of slab and 10 houses of crawlspace construction were treated with Gold Crest Termide® (EPA Reg No. 876-233) termiticide according to label instructions. Termide is an emulsifiable concentrate consisting of 39 percent technical chlordane and 20 percent heptachlor as the active ingredients. One gallon of the concentrate is mixed with 99 gallons of water to form an emulsion of approximately 0.75 percent. Application is by injection into the soil or by trenching around the foundation. Drilling into the foundation or slab is sometimes required. Only soil injection methods were used for the homes in this study.

Air in the homes was collected from the living room, a bedroom, and the kitchen of the homes before treatment and 1, 7, 14, 28, and 90 days after application. Air was drawn, at 1.5-2 liters per minute, through collection tubes containing Chromosorb 102 as the trapping agent using calibrated personal sampling pumps. Samples were collected for 2 hours.

Sample tubes were eluted with pentane, concentrated, and diluted with hexane. The extract was then treated with concentrated sulfuric acid to remove interfering compounds and brought to a definite volume of 10 ml with hexane. The components of technical chlordane and heptachlor were then quantified by gas chromatography using an electron capture detector. The levels of detection were 0.04 ug/m³ and 0.2 ug/m³ for heptachlor and chlordane, respectively.

3.0 RESULTS AND CONCLUSIONS

The registrant provided 2 tables summarizing the air levels of chlordane and heptachlor (Copies of these Tables, 1 and 2, are attached). A table of raw data values from the contract laboratory was also submitted. The components of chlordane presented in this table were; Compound C, Compound E, Gamma Chlordane, Alpha Chlordane, and t-nonachlor.

EAB has not been able to verify the summary values calculated for chlordane from the raw data. No sample calculations or explanations were provided. Until this discrepancy can be explained by the registrant, the summary tables must be rejected and no estimate of exposure can be obtained. EAB will again review the report when such information becomes available.



David Jaquith
Special Review Section
Exposure Assessment Branch
Hazard Evaluation Division

Table 1. Chlordane air levels ($\mu\text{g}/\text{m}^3$) in homes treated for termite control.

Crawl space Slab

Day	Missouri				Texas			Missouri			Texas		
	Mean	Std ^{1/}	N ^{2/}	Mean	Std	N	Mean	Std	N	Mean	Std	N	
Pre-	<0.2	-	55	<0.2	-	57	<0.2	-	50	<0.2	-	46	
1	1.32	0.229	59	0.459	0.062	59	0.150	0.004	59	0.266	0.044	60	
7	1.436	0.173	58	0.538	0.037	60	0.167	0.007	60	0.208	0.018	60	
14	1.267	0.141	60	0.569	0.036	60	0.179	0.009	60	0.207	0.017	59	
28	1.487	0.160	60	0.526	0.034	59	0.215	0.014	60	0.314	0.075	60	
91	1.325	0.109	60	0.674	0.039	60	0.274	0.013	61	0.180	0.008	60	
Average except Pre	1.367	0.074	297	0.553	0.019	298	0.198	0.005	300	0.235	0.018	299	

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^{1/} Std = Standard error

^{2/} N = Number of observations

Table 2. Heptachlor air levels ($\mu\text{g}/\text{m}^3$) in homes treated for termite control.

Crawl space Slab

Day	Missouri			Texas			Missouri			Texas		
	Mean	Std ^{1/}	N ^{2/}	Mean	Std	N	Mean	Std	N	Mean	Std	N
Pre-	<0.04	-	55	<0.04	-	57	<0.04	-	50	<0.04	-	46
1	1.139	0.208	59	0.352	0.058	59	0.050	0.004	59	0.158	0.041	60
7	1.244	0.155	58	0.433	0.036	60	0.067	0.007	60	0.105	0.018	60
14	1.100	0.128	60	0.463	0.034	60	0.079	0.009	60	0.107	0.017	59
28	1.293	0.143	60	0.423	0.033	59	0.107	0.014	60	0.198	0.066	60
91	1.139	0.097	60	0.566	0.037	60	0.165	0.012	61	0.080	0.007	60
Average except Pre	1.182	0.067	297	0.448	0.018	298	0.094	0.005	300	0.129	0.016	299

^{1/} Std = Standard error

^{2/} N = Number of observations