

US EPA ARCHIVE DOCUMENT

DP BARCODE: D200895

CASE: 015420
SUBMISSION: S460079

DATA PACKAGE RECORD
BEAN SHEET

DATE: 11/16/94
Page 1 of 1

* * * CASE/SUBMISSION INFORMATION * * *

CASE TYPE: REGISTRATION ACTION: 405 6(A)(2) ADVERSE DATA
RANKING : 35 POINTS (B)
CHEMICALS: 059101 Chlorpyrifos (ANSI) 42.8000%

ID#: 062719-00047 DOW DURSBAN TC TERMITICIDE CONCENTRATE
COMPANY: 062719 DOWELANCO
PRODUCT MANAGER: 19 DENNIS EDWARDS, JR. 703-305-6386 ROOM: CM2 207
PM TEAM REVIEWER: CARL ANDREASEN 703-305-5417 ROOM: CM2 201
RECEIVED DATE: 02/28/94 DUE OUT DATE: 05/09/94

* * * DATA PACKAGE INFORMATION * * *

DP BARCODE: 200895 EXPEDITE: Y DATE SENT: 03/23/94 DATE RET.: / /
CHEMICAL: 059101 Chlorpyrifos (ANSI)
DP TYPE: 001 Submission Related Data Package
CSF: N LABEL: N

ASSIGNED TO	DATE IN	DATE OUT	ADMIN DUE DATE: 04/13/94
DIV : EFED	03/24/94	/ /	NEGOT DATE: 04/13/94
BRAN: EFGB	03/25/94	11 / 15 / 94	PROJ DATE: 04/13/94
SECT: GTS	03/25/94	11/15/95	
REVR : JJORDAN	03/25/94	11/15/95	
CONTR:	/ /	/ /	

* * * DATA REVIEW INSTRUCTIONS * * *

ATTENTION: BETSY BEHL. ["Please expedite with a 3 week due date./Thanks/Liz"] Please review.

* * * DATA PACKAGE EVALUATION * * *

* * * ADDITIONAL DATA PACKAGES FOR THIS SUBMISSION * * *

DP BC	BRANCH/SECTION	DATE OUT	DUE BACK	INS	CSF	LABEL
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1. CHEMICAL:

Chemical name: O,O-diethyl O-(3,5,6-trichloro-2pyridinyl) phosphorothioate

Common name: chlorpyrifos

Trade name: Dursban TC, Equity Termiticide Concentrate

Structure:

2. TEST MATERIAL: not applicable

3. STUDY/ACTION TYPE: 6(a)2 action - Reports of chlorpyrifos detections in wells, ponds and cisterns during January, 1992 through March, 1993, and July, 1993 through March, 1994.

4. STUDY IDENTIFICATION:

DP Barcodes: D200420, D200895, D204387.
Case: 015420, 015420, 015420
Submission: S460366, S460079, S466308
Date sent to EFGWB: 03/21/94

5. REVIEWED BY:

John Jordan, Ph.D.
Microbiologist
OPPTS/EFED/EFGWB/GW Technology Section

Signature: John Jordan
Date: 11/16/94

6. APPROVED BY:

Elizabeth Behl, Head
OPPTS/EFED/EFGWB/GW Technology Section

Signature: E Behl
Date: 11/16/94

7. CONCLUSIONS:

Treatment of some structures with Dursban TC and Equity Termiticide Concentrate resulted in contamination of wells ponds, and cisterns. Three registrant 6(a)2 submissions, D200420, 200895 and 204386, reported detections from July 1, 1993 through March 31, 1994. Residue concentrations ranged from 30 to 2,090 ppb at 37 sites in at least 15 states. Residues above the adult 70-kg HAL of 20 ppb may result in unreasonable adverse effects.

Also, a previous submission, D195492, reported similar detections from January, 1992 through March, 1993. There has been a high frequency of chlorpyrifos detections in wells, and also a few ponds and cisterns following treatment of structures for termites.

8. RECOMMENDATIONS:

- (A) Ground-water contamination resulting from use of chlorpyrifos as a termiticide makes it necessary for the registrant to propose mitigating label changes to prevent water contamination in treated areas. Either the use pattern and/or the application rate must be revised in order to prevent contamination in treated areas.
- (B) Dow-Elanco's training programs for pest control operators (PCOs) should be intensified to prevent contamination of wells, cisterns, and ponds. The training should identify high risk areas and address methods of prevention, follow-up, monitoring and remediation.

For example, pest control companies that employ PCOs who repeatedly treat structures with termiticides that contaminate wells, cisterns, and ponds, must have compliance monitoring administered by the State Lead Agencies. Appropriate action must be taken to eliminate contamination of wells, cisterns and ponds resulting from termite treatment to structures.

- (C) Follow-up monitoring in high risk areas should be mandatory because of high levels of exposure (as high as 70 times the 1-day child health advisory levels).
- (D) To meet requirements of the 6(a)2 program, the attached Ground-Water Incident Identification Form must be completed. The forms must contain the specific information requested.

Information requested in the attached "Environmental Fate Data Extraction Sheet Ground-Water Incident Study Identification Form" is required by the Agency. Reporting of contaminated wells, cisterns, ponds and ground water without identification and documentation of their specific locations, does not fulfill the purpose of the 6(a)2 program.

9. BACKGROUND:

(D200420)

DowElanco received the following reports of suspected well contaminations following application of Dursban TC and Equity TC: Twenty-two suspected well contamination incidents were reported to DowElanco from July 1, through September 30, 1993. Twelve of the 22 wells had no detectable levels of chlorpyrifos, 7 wells contained less parent than the 10 day HAL for children (30 ppb). Three wells contained chlorpyrifos levels > lifetime HAL of 20 ppb (96 - 743 ppb).

(D200895)

Ten suspect wells were reported to DowElanco from October 1, 1993 through December 31, 1993. Five of the 10 wells had no detectable level of parent. One of the wells contained <10 day HAL for children (30 ppb). Three wells and one pond contained parent (103 to 2090 ppb) above the MCL of 20 ppb.

(D204386)

During the period from January 1 to March 31, 1994, 17 suspected well/pond contamination incidents were reported to DowElanco. Eleven of the wells/ponds tested had no detectable levels of chlorpyrifos. Four of the wells/ponds tested were found to contain chlorpyrifos residue less than the 10 day HAL for children (30 ppb). Two wells and one pond contained levels of chlorpyrifos above the HAL (34, 38 and 982 ppb, respectively)

DowElanco does not monitor wells, ponds or cisterns after treatment with termiticides. After termiticide treatment some landowners report their wells as "suspect". DowElanco will sample and analyze the water to confirm or reject the landowner's concerns. DowElanco analyzes water samples from every well, cistern, or pond classified as "suspect". Some wells classified as "suspect" are free from contamination. The contaminated wells are reported to EPA and remediated by Dow.

10. DISCUSSION:

The data in this action were submitted under Section 6(a)2 of FIFRA. The report of detections contained levels of chlorpyrifos above the 1-day child HAL (30 ppb), the long term adult HAL (100 ppb) and the lifetime adult HAL (20 ppb) which may result in unreasonable adverse effects.

The detections resulted from the treatment of structures for termites. Using the remediation procedure, outlined in the paragraph below, clean-up of the wells continued until chlorpyrifos residues were non-detectable. According to the registrant the remediation process can take from 7 to 160 days.

The remediation procedure consists of superchlorination (with sodium or calcium hypochlorite), purging of the wells, and installation of charcoal filters. The remediation system uses an in-line charcoal filter that adsorbs chlorpyrifos from water to <1 ppb at flow rates as high as 6 gpm. It is DowElanco's policy to initiate remedial measures on all suspect wells. The clean-up and analytical service is free of charge if a well is suspected of being contaminated.

The initial concentrations of chlorpyrifos residues ranged from 30 to 2,090 ppb. The olfactory (odor) threshold of chlorpyrifos is 10 ppb.

DowElanco claims that its current product stewardship program is adequate to protect water supplies. The focus is on prevention and training and provision of remediation assistance; when this is not effective, contamination may occur. DowElanco stated:

" We wish to point out that the chlorpyrifos olfactory threshold of 10 ppb is significantly below the HA level for chlorpyrifos making it very likely that even low levels of contamination will be detected immediately". Table 1, page 5, indicates that dependence on the olfactory threshold as an early warning has been ineffective in the large number of incidents reported to the Agency.

Table 1
CHLORPYRIFOS DETECTIONS > HAL

Location	Date	Initial Residue Concentration in Wells (ppb)
	1992	
KY	"	916
KY	"	35
KY	"	110
KY	"	33
KY	"	112
KY	"	174
MO	"	77
MO	"	32
AL	"	67
TN	"	99
TN	"	355
TN	"	95
TN	"	342
SC	"	81
NY	"	35
OH	"	54
NC	"	37
IL	"	35
VA	"	221
MD	"	218
IN	"	30
	PONDS	
KY	"	362
KY	"	154
WV	"	265
PA	"	176
LA	"	37
AL	"	56
VA	"	56
Unknown	1/1/93 - 3/31/93	
"	CISTERN	309
"	WELL	101
	7/1/93 - 9/30/93	
"	WELLS	
"	"	743
"	"	96
"	"	96
	7/93 - 3/94	
"	WELL	2,090
"	POND	982
"	"	142
"	WELLS	131
"	"	103
"	"	38
"	"	34

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