



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

SEP 19 1988

MEMORANDUM

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

SUBJECT: Dursban TC (Chlorpyrifos): Amended Registration for Plenum Housing - EPA Identification No. 464562; EPA Record No. 227274; Caswell No. 219AA; Tox. Branch Project No. 8-0975.

FROM: Alan C. Levy, Ph.D.
Toxicologist, Review Section I
TB-HFAS/HED (TS-769C)

Alan C. Levy
9-16-88

TO: Dennis Edwards, PM # 12
Insecticide-Rodenticide Branch
Registration Division (TS-767C)

THRU: Quang Q. Bui, Ph.D., D.A.B.T.
Section Head, Review Section I

Quang Q. Bui 9/16/88

and

William Burnam, Acting Chief
Toxicology Branch, Herbicide-Fungicide-Antimicrobial Support
Health Effects Division (TS-769C)

W. Burnam 9/16/88

Registrant: Dow Chemical Company

Action Requested: Provide a risk assessment for the plenum housing use of DURSBN TC (Chlorpyrifos) utilizing the Exposure Assessment Branch (EAB) review. [A copy of the review is appended.]

EVALUATION OF REVIEW: Based upon the data provided in EAB's review and utilizing the margin of safety calculations as appear in the Memorandum from Quang Q. Bui to Dennis Edwards, June 17, 1988, even during treatment, there appears to be a safety margin of over 100 (112). This margin ranges from 131-167 during the 8 hour period following treatment, and at 24 hours or longer (24 hours-30 days) post-treatment, this safety margin ranges from 189-215. At 90 days, the margin is 1283. These data appear on the attached Table 1.

RECOMMENDATION:

The concentration of DURSBN TC (Chlorpyrifos) to be applied as a termiticide in plenum housing is considered acceptable.

Table 1

CALCULATIONS OF THE MARGIN OF SAFETY FOR CHLORPYRIFOS CONCENTRATIONS
IN PLENUM STRUCTURES

$$\text{Margin of Safety} = \frac{\text{Inhalation NOEL (295 ug/m}^3\text{)}}{\text{Airborne Concentration (ug/m}^3\text{)}}$$

[This formula is from a Memorandum from Quang Q. Bui to Dennis Edwards, June 17, 1988. (copy attached)]

Time of Sample	No. of Plenum Structures Sampled	NOEL (ug/m ³)	Mean Concen. (ug/m ³)	Range of Concen. (ug/m ³)	Margin of Safety
Pretreatment	(7)	295	0.12	0.05-0.40	2458
During Treatment	(7)	295	2.63	0.10-10.40	112
Post-Treatment					
2 hours	(7)	295	1.94	0.12-6.70	152
4 hours	(7)	295	2.26	0.21-6.30	131
8 hours	(7)	295	1.77	0.11-6.20	167
24 hours	(7)	295	1.43	0.14-4.70	206
.....					
7 days	(7)	295	1.56	0.08-8.10	189
30 days	(7)	295	1.37	0.07-6.80	215
90 days	(5)	295	0.23	0.08-0.57	1283
.....					
1 year	(3)	295	0.17	0.08-0.23	1735

These data were extracted (and calculated) from Table 5, page 10 of the memorandum from Michael Firestone to Dennis Edwards, June 28, 1988.