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

JUN 17 1988

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM:

SUBJECT: Amended registration for the use of Chlorpyrifos in plenum type structures
EPA ID. No. 464-562 Tox Proj No. 8-0693
Caswell No. 219 AA

FROM: Quang Q. Bui, Ph.D. Quang Bui 6/15/88
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Toxicology Branch/HED (TS-769C) 6/17/88

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

THRU: Theodore M. Farber, Ph.D.
Chief, Toxicology Branch
Hazard Evaluation Division (TS-769C)

Registrant: Dow Chemical U.S.A.
Midland, Michigan 48640

Action Requested: Review an amended registration for the use of Chlorpyrifos (Dursban TC) as a termiticide in plenum type structures.

The registrant has proposed an amended registration for the use of Dursban TC (Termiticide Concentrate) in plenum type structures. In a letter dated 2/23/88, the registrant indicated that with proper application, airborne concentrations of Dursban TC were below 5 ug/m^3 and were typically below 1 ug/m^3.

RECOMMENDATION AND CONCLUSION:

1. TOX defers to the EAB/HED for the determinations of airborne concentrations as referred to by the registrant.

2. From a 90-day vapor inhalation study in rats, a systemic inhalation NOEL of 20.6 ppb was established. This NOEL may be used to determine the margins of safety for the proposed use.

3. Assuming that EAB/HED concurs with the registrant for the airborne concentrations of 1 and 5 ug/m^3, the following margins of safety will be obtained:

Chlorpyrifos Molecular Weight = 350.62
Chlorpyrifos Melting Point = $41.5^{0}C$

$$1 \text{ ppm} = \frac{MW}{24,450} = \text{mg/L}$$

$$1 \text{ ppm} = \frac{350.62}{24,450} = 0.0143 \text{ mg/L}$$

1 ppb = 0.0143 ug/L

20.6 ppb = 0.0143 ug/L x 20.6 = 0.295 ug/L (NOEL)

$$\text{Margins of safety} = \frac{\text{Inhalation NOEL (0.295 ug/L)}}{\text{Airborne Concentration}}$$

a) At 5 ug/m^3 (0.005 ug/L)

$$\text{Margin of Safety} = \frac{0.295 \text{ ug/L}}{0.005 \text{ ug/L}} = 59$$

b) At 1 ug/m^3 (0.001 ug/L)

$$\text{Margin of Safety} = \frac{0.295 \text{ ug/L}}{0.001 \text{ ug/L}} = 295$$

EAB considerations permitting, the margins of safety for the proposed use of Durban TC as a termiticide in plenum type structures are 59 and 295 for airborne concentrations of, respectively, 5 and 1 ug/m^3.