

US EPA ARCHIVE DOCUMENT

Shaughnessy #: 79801

EAB Log-Out Date: 6/5/87

To: Lois Rossis
Product Manager #21
Registration Division (TS-767C)

From: Michael Firestone, Acting Chief *Michael Firestone*
Special Review Section
Exposure Assessment Branch
Hazard Evaluation Division (TS-769C)

Attached, please find the EAB review of...

Reg./File No.: _____

Chemical: Thiram

Type Product: Fungicide

Product Name: Spotrete

Company Name: W.A. Cleary Chemical Corporation

Submission Purpose: Waiver of Reentry Interval for Use
on Golf Course Turf

ACTION CODE: _____

Date In: 3/23/87

EAB #: 70445-46

Date Completed: 6/5/87

TAIS Code: _____

Deferrals To:

- _____ Ecological Effects Branch
- _____ Residue Chemistry Branch
- _____ Toxicology Branch
- _____ Benefits and Use Division

Monitoring study requested by EAB:

Monitoring study voluntarily conducted by registrant:



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

JUN 5 1987

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Waiver of Reentry Interval for Thiram Use On Golf Courses.

FROM: David Jaquith
Special Review Section # 2
Exposure Assessment Branch
Hazard Evaluation Division (TS-769C)

TO: Lois Rossi
Product Manager #21
Registration Division (TS-767C)

W.A. Cleary Chemical Corporation has requested a waiver of the 24 hour reentry interval for their fungicide Spotrete after use on golf course turf. Spotrete is a water dispersible granular formulation of thiram containing 75 percent active ingredient. The material is applied to turf at weekly intervals at a rate of 2.5 ounces of the formulation per 1000 square feet of turf. The current label requires a 24 hour intervals before golfers can enter the treated area. A previous evaluation by EAB (1) indicated that, in order to assess the inhalation exposure of persons entering treated areas, the registrant needed to submit a vapor pressure for the material. EAB has recently received 3 estimates (provided by Residue Chemistry Branch) of the vapor pressure of this material. One estimate was less than 10^{-7} mm Hg, the others averaged 1.7×10^{-5} mm Hg, the value used for this assessment. Assuming that the air is saturated with the fungicide, and using the ideal gas law, the concentration would be:

$$PV = nRT$$

where

- P = vapor pressure = 1.7×10^{-5} mm Hg
- V = volume, in this case 1000 l or 1 cubic meter
- R = the universal gas constant = 0.0821 l atm/mol K
- T = temperature in Kelvin = 298 K
- n = mols of thiram

2

Rearranging gives:

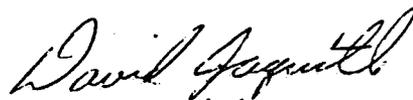
$$\begin{aligned}n &= \frac{PV}{RT} \\&= \frac{(1.7 \times 10^{-5} \text{ mm Hg}/760 \text{ mm Hg})(1000 \text{ l})}{(0.0821 \text{ l atm/mol K})(298 \text{ K})} \\&= 9.1 \times 10^{-7} \text{ mols of thiram}\end{aligned}$$

The molecular weight of thiram is 240 g/mol or 240×10^3 mg/mol, therefore airborne concentration would be:

$$\begin{aligned}\text{Concentration (mg/m}^3\text{)} &= 240 \times 10^3 \text{ mg/mol} \times 9.1 \times 10^{-6} \text{ mol/m}^3 \\&= 2.2 \times 10^{-4}\end{aligned}$$

A commonly used guideline is the threshold limit value (TLV), the time weighted average concentration for a normal 8-hour workday and a 40-hour workweek to which nearly all workers may be repeatedly exposed, day after day, without adverse effect. The TLV for thiram is 5 mg/m^3 , a value greatly exceeding the saturation concentration of thiram vapors.

EAB realizes that saturation of air with thiram will not occur in an open area such as a golf course, and that this assumption greatly overestimates respiratory exposure. Even with this overestimation the concentration is well below the TLV. EAB sees no reason to require a 24 hour reentry interval for golf course use of thiram on the basis of respiratory exposure.



David Jaquith
Exposure Assessment Branch
Hazard Evaluation Division (TS-769C)

REFERENCES

- 1) Memorandum from P. Ott (EAB) to H. Jacoby (RD), dated 8 July 1985, titled "Waiver of Reentry Data Requirement for Winter Turf Use of Thiram".
- 2) ACGIH (1982) TLVs - Threshold Limit Values for Chemical Substances and Physical Agents in the Work Environment with Intended Changes for 1982.