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Shaughnessy #: 079801

Date out of EAB: JUN 10 1985

Signature: SM

To: H. Jacoby
Product Manager # 21
Registration Division (TS-767)

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Registration Standards, Section #3
Exposure Assessment Branch
Hazard Evaluation Division (TS-769)

Attached please find the EAB review of:

Reg./File No.: 45728-1

Chemical: Thiram

Type Product: F

Product Name: Thiram

Company Name: UCB Chemicals

Submission Purpose: Response to RS

Action Code: 661

Date In: 3/28/85

EAB # 5454

Date Completed: 6/7/85

TAIS (level II) Days

Deferrals To:

42

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Ecological Effects Branch

Residue Chemistry Branch

Toxicology Branch

Data in Response to Thiram Registration Standard

161-1 Hydrolysis Studies

Reference: UCB Chemicals, Thiram Re-Registration EPA Notice of July 2, 1984, Reg./File No.: 45728-1

Conclusions:

This study (a French translation) does not fulfill the requirement for pH 9 hydrolysis, because degradates were not identified and not quantified (no material balance). Also, this study does not fulfill the requirement for pH 5, 7 and 9 because the aqueous solubility of thiram is 30 ppm and the hydrolytic solutions were 100 ppm, so that there is a strong possibility the thiram was not properly dissolved. Also, since buffer was added, which increases ionic strength, this would decrease the solubility even more.

A cosolvent (not exceeding a concentration of 1% by volume) is allowable for compounds of low solubility.

Materials and Methods:

Pure technical thiram was added to buffered solutions at pH 5, 7 and 9 to yield an initial concentration of 100 ppm and kept in the dark. Steps were taken to ensure a sterile environment and to protect against volatilization losses.

Samples were taken at day 0, 2, 6, 9, 15 and 30 and analyzed by HPLC with a UV detector.

Reported Results:

Thiram exhibited no hydrolysis at pH 5 and 7 during a 30 day period.

At pH 9, thiram had a half-life of 2.5 days.

Discussion:

1. Temperature unspecified.
2. Level of detection and % recovery of the method unspecified.
3. Day zero thiram concentration was 416 micromoles/l but erratic concentrations for pH 5 and 7 over the 30 day period were reported. For example, concentrations as low as 273 micromoles/l were reported, yet day 30 concentrations range from 345-365 micromoles/l. This anomaly may be due to the fact that the thiram was not totally in solution.

163-1 Leaching and Adsorption/Desorption Studies
Soil Column Leaching Study

Reference: UCB Chemicals, Thiram Re-Registration EPA Notice of July 2, 1984, Reg./File No.: 45728-1

Conclusions:

This soil column leaching study (German translation) does not satisfy registration requirements because:

1. An insufficient quantity of water was added to the column (300-430 ml were used but 995 ml were required).
2. A formulated product was used instead of a non-radiolabelled technical or purer grade of the active ingredient or an analytical grade radiolabelled active ingredient.
3. Only two soils were used.
4. No aged leaching study was done for degradates.
5. No details given for the analytical method used.
6. No K_d values reported.
7. Only the leachate was measured, not soil segments.
8. Since an adsorption/desorption (batch equilibrium) study is required for several uses of thiram (domestic outdoor, aquatic and greenhouse), it is strongly recommended that the registrant do this test, which will satisfy all registered uses. It must be done on the parent compound and a study using aged treated soil must be done for degradates.

Materials and Methods:

Sand and sandy loam soil treated with an 80% WP formulation at 3-4 kg/hectare were added to a 30 cm x 5 cm glass column and eluted with 300-430 ml of water.

The leachate only was analyzed for thiram.

Reported Results:

No thiram appeared in the leachate (amount reported as "nil") for both the sand and sandy loam soil.

Discussion:

1. It is impossible to assess the leaching potential of thiram in ground water.