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

SEP 3 1987

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

Memorandum

Subject: Triphenyl Tin Hydroxide (TPTH): Response to Registration Standard; Amendments to EPA Accession Nos. 266045 and 266046, in response to RCB memo of 5-1-87 (F. Suhre); MRID No. 402776-01; RCB No. 2697.

From: Francis B. Suhre, Chemist
Special Registration Section II
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Hazard Evaluation Division (TS-769)

Thru: Edward Zager, Section Head
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To: L. Rossi, PM #21
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Registration Division (TS-767)

With this amendment the registrant, M&T Chemicals Inc., has responded to several deficiencies cited in RCB's original review (F. Suhre, memo of 5-1-87). The registrant's responses are detailed in a study entitled:

Triphenyltin Hydroxide - Responses to Questions in the EPA Letter May 18, 1987 (Rossi to Shelton), MRID No. 402776-01.

The original deficiencies are listed below, followed by the petitioner's response and RCB's comments. For convenience, the deficiencies are restated as they appear in RCB's review dated 5-1-87.

Deficiency No. 2:

A current label for Supertin 4L must be provided.

Registrant's Response:

The registrant has provided a current label for Supertin 4L, EPA Reg. No. 1812-244. The label contains use directions for peanuts and pecans, as follows:

Peanuts: To control Leafspot, apply 4.7 to 7.6 fl. ozs. (0.15 to 0.24 lbs. ai.) of Supertin 4L per acre using either ground spray equipment (diluted with 10 to 100 gallons of water), or aerial spray equipment (diluted with 3 to 10 gallons of water). Application should begin approximately 6 weeks after planting or as soon as first sign of leaf-spot appear. Spray application should continue on a 10 to 14 day schedule. Do not apply within 14 days of harvest. Do not allow hogs to feed on peanut(treated)fields. Hulls from treated peanuts may be used in feed for livestock. Do not use vines for feed.

Pecans: To control Brown Leafspot, Downy Spot, Powdery Mildew, Liver Spot, Sooty Mold, and Leaf Blotch apply Supertin 4L at: 11.4 to 22.8 fl. ozs. (0.35 to 0.70 lbs. ai.) per acre in a minimum of 20 gallons of water using areial spray equipment, or apply at 3 to 9 fl. ozs. (0.09 to 0 28 lbs. ai) per 100 gallons of water using ground spray equipment. Direct ground spray to all parts of the tree. Application should begin at pre-pollination stages when young leaves are unfolding, and a second application made when the small nuts are forming. Repeat spray applications at 2-4 week intervals as needed to maintain control. Do not apply after shucks have started to open.

RCB's Comment:

We conclude that deficiency No. 2 has been resolved.

Deficiency 3a:

M&T Method TA-49 appears to be adequate for assaying TPTH, its degradation products (tetraphenyltin, diphenyltin oxide, and phenyl stannoic acid), and inorganic tin (as tetrabutyltin), each at 0.05 ppm. The registrant must submit a "non-confidential" analytical method so that a Method Try-Out (MTO) can be performed; ultimately the method must be available for enforcement purposes.

Registrant's Response:

The registrant has submitted a "non-confidential" copy of M&T Analytical Test Method TA-49, Separation and Determination of Phenyltin Species ($\phi_a SnX_{4-a}$) in Peanuts and Pecans by Liquid Chromatography/Atomic Absorption Spectroscopy.

RCB's Comment:

We conclude that deficiency No. 3a has been resolved.

Deficiency No. 3b. :

The registrant must either demonstrate that the method will not be subjected to interferences from other organotin pesticides or provide a confirmatory method. Vendex, hexakis(2-methyl-2-phenyl-propyl)distannoxane has a tolerance for pecans at 0.05 ppm.

Registrant's Response:

The registrant states that neither cyhexatin (Plictran), nor hexakis(2-methyl-2-phenylpropyl)distannoxine (Vendex) interfere with the assay of TPTH or its metabolites using M&T Method TA-49. The registrant addressed this issue in a recent submission (4-2-87, MRID No. 401494-01, reviewed by F. Suhre, 9-2-87) in response to a previous RCB review (S. Hummel, memo of 9-4-87).

RCB's Comment:

The registrant submitted HPLC chromatograms for Plictran (including its di- and monocyclohexyl metabolites) and Vendex in connection with MRID No. 40149401. Using the HPLC parameters for the most recent version of the method (not specifically stated), the retention times were:

Compound	HPLC Retention Time
Cyhexatin	113 minutes
dicyclohexyl metabolite	88 minutes
monocyclohexyl metabolite	68 minutes
Vendex	49 minutes

The registrant further states that since all TPTH chromatograms were less that 35 minutes, interferences from Plictran and Vendex residues are unlikely.

The HPLC retention times for TPTH and its metabolites as reported in Method TA-49 (Accession 266045) are:

Compound	HPLC Retention Time
$\emptyset_4Sn$	5-6 minutes
$\emptyset_3SnOH$	7-8 minutes
$\emptyset_2SnO$	9-10 minutes
$\emptyset_1SnOOH$	11-13 minutes
Bu_4Sn	19-21 minutes

Based on the above data, we conclude that Plictran and Vendex should not interfere with the assay of TPTH using M&T Method TA-49. Deficiency 3b. has been resolved.

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Deficiency No. 4a:

The residue data for pecans and peanuts cannot be fully evaluated at this time; additional information on the field and laboratory study protocols is required as follows

i. Identity of responsible personnel.
ii. Identity of the Pesticide product used; its formulation and type (WP, EC, G,..etc.), EPA Reg. No., % active ingredient and the lbs. ai/gallon if appropriate.
iii. Size and location of trial plots.
iv. Method of crop treatment and harvest: the developmental stage of the crop at the time of treatment and harvest; method and number of pesticide applications; and PHI.
v. Method of selecting representative/random samples from test plots for residue analysis.
vi. Information on sample handling and storage from harvest to laboratory analysis.
vii Date samples were extracted and analyzed and description of quality control measures.

Details for the evaluation of residue data are outlined in "Hazard Evaluation Division Standard Evaluation Procedure: Magnitude of the Residue: Crop Field Trials." We suggest that the registrant obtain a copy of this document through NTIS.

Registrant's Response:

The registrant stated that deficiency No 4a was recently addressed in the following submissions:

1. Vol. I - 171-4 Residue Chemistry - Triphenyltin Hydroxide Protocols and Field Histories for Residue Field Trials on Peanuts (MRID No. 401493-01, submitted 4-2-87).

2. Vol. III - 171-4 Residue Chemistry - Triphenyltin Hydroxide Protocols and Field Histories for Residue Field Trials on Pecans. (MRID No. 401493-03, submitted 4-2-87).

3. Triphenyltin Hydroxide - Responses to Question in the EPA Letter dated September 24, 1986 (Jacoby to Shelton; MRID No. 401494-01, submitted 4-2-87).

RCB's Comment:

A detailed discussion of the above cited submissions can be found in two recent RCB reviews (F. Suhre, memos. of 9/1/87 and 9/2/87). Please refer to those reviews for RCB's conclusions concerning the pecan and peanut field studies. In summary, deficiency 4a has only partially been resolved.

Conclusions:

Deficiences 2, 3a., and 3b., have been resolved. Deficiency 4a. has only partially been resolved. Our conclusions regarding these deficiencies are discussed in our reviews of 9-1-87 and 9-2-87 (F. Suhre).

Recommendation:

We recommend that the registrant be made aware of our conclusions and that the partially resolved deficiency (deficiency 4a) be fully resolved. The registrant should refer to our reviews of 9-1-87 and 9-2-87 for a full discussion of this deficiency.

cc: R.F.,Circu.,F. Suhre,TPTH S.F., Reg. Std file. PMSD/ISB.
RDI:SH:9/1/87:RDS:9/1/87
TS-769:FBS:fbs:Rm.814:CM#2:557-1883:9/2/87