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

APR 29 1986

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Record No. 168713, RCB No. 623
Record No. 168714, RCB No. 624
Record No. 168715, RCB No. 625
Record No. 168716, RCB No. 626
Record No. 168717, RCB No. 627
Record No. 168718, RCB No. 628
Record No. 168719, RCB No. 629
Data Submitted to EPA in Response to the Registration Standard for Methomyl. Dated 2/19/86.
Record No. 171225, RCB No. 779
Record No. 171229, RCB No. 780
Record No. 171230, RCB No. 781
Data Submitted to EPA in Response to the Registration Standard for Methomyl. Dated 3/12/86.

TO: L. Schnaubelt, PM 12
Registration Division (TS-767)

THRU: Charles L. Trichilo, Chief
Residue Chemistry Branch
Hazard Evaluation Division (TS-769)

FROM: R. W. Cook, Chemist,
Residue Chemistry Branch
Hazard Evaluation Division (TS-769)

The Registration Standard for Methomyl (issued 1981) identified a number of deficiencies in the data supporting the use of methomyl. These deficiencies have been reviewed (R. J. Kent, 11/29/82; E. Brittin, 7/20/84; E. Brittin, 8/15/84; W.T. Chin, 9/13/85). The registrant, in this case, E. I. du Pont de Nemours and Company, provides some of the requested data. We shall reiterate the deficiency, provide the registrants response, and finally, draw appropriate conclusions.

Item 1: Residue data for corn processing cannery wastes.

The Methomyl Registration Standard reported that residue data are required for corn cannery waste. Four trials in three locations (NY, MN:1983, MN:1984) are reported for 1 application of 0.45

lbai/A or 5 to 6 applications of 0.25 lbai/A or 9 applications of 0.20 lbai/A with samples obtained at 2 to 6 days posttreatment. Recovery values ranged 75 to 100%. All samples show <1 ppm at any PHI. Thus, we conclude that residues of methomyl in corn cannery waste are not likely to exceed 10 ppm, the established tolerance level for corn forage and fodder. This deficiency is resolved.

Item 2: Residue data for grapes grown East of the Rockies.

In the Registration Standard for Methomyl, we considered residue data reflecting use in geographic areas constituting about 92.9% of the grapes grown in the U.S. (CA 6,076,000 tons, and AZ 15,100 tons out of a total of 6,554,260 tons). Therefore, additional residue data for grapes grown East of the Rockies were required. The registrant has now submitted residue data from use in DE (production not reported in Ag. Stats., 1982), Ohio (9,000 tons) and NY (157,000 tons). The geographic data now reflect use in 95.5% of the grapes grown in the US. in 1982. Residues of methomyl ranged from 0.23 to 4.9 ppm at 0 days after last of 2 treatments at 2 lbai/A. At 1 day, residues ranged from 0.42 to 2.7 ppm, while by 7 days posttreatment, all residue levels were <1.5 ppm. These additional residue data show that residues are not likely to exceed the established 5 ppm tolerance for residues of methomyl in grapes. This deficiency is resolved.

Item 3: Residue data for orchard cover crops.

The Methomyl Registration Standard requested residue date for orchard floor cover crops for the established uses in apple, citrus, peaches, nectarines and pomegranate orchards. Label restrictions preclude grazing or feeding of treated orchard cover crops for 10 days after treatment. Submitted data from cover crops (grasses) in apple, pear, and peach orchards receiving 5 applications of 8 lbai/A (exaggerated rate) showed up to 500 to 1400 ppm at day 0, and day 3 residues were up to 51 ppm. All grass samples from normal application rates of 4 pounds active per acre or less showed residue levels less than 10 ppm at 7 days posttreatment. These data confirm that methomyl residues on orchard floor cover crops (forage grasses) are not likely to exceed 10 ppm. This deficiency is resolved.

Item 4: Residue data for peaches from additional peach growing areas and at rates 1 to 8 pounds ai/A 4 day PHI

The Methomyl Registration Standard reported that additional geographic representation was needed, along with residue data for application rates of 1 to 8 pounds active per acre with a 4 day PHI. The established tolerance is 5 ppm. Three trials [GE, DE, NJ] are submitted with peaches receiving 5 to 6 applications of 0.5 to 8 pounds lbai/A. While the residue data does not exactly reflect the 4 day PHI, the submitted data represent 3 and 7 day PHI. Two peach samples receiving 5 x 8 lb. showed 5.7 to 5.8 ppm at day 1, declining to 2.4 ppm at 3 days and 1 ppm at 7 days. All other

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peach treatments resulted in residues less than 5 ppm by day 1. From this data we are able to conclude that the established 5 ppm tolerance level and the 4 day preharvest interval are appropriate and that adequate geographically representative residue data are available. This deficiency is resolved.

Item 5: Residue data for greenhouse tomatoes.

The Registration Standard requested residue data for greenhouse tomatoes to ascertain the appropriate preharvest interval. The Registration Standard reports the maximum registered use rate for methomyl on field grown tomatoes is 0.9 lbs. ai/A, with a 1 day PHI up to 0.45 lbs. a.i./A and 2 day PHI above 0.45 lbs. a.i./A. Use on greenhouse tomatoes in NC and OH employ a maximum of 0.9 lbs. a.i./200 gals., with 7 day PHI for rates under 0.45 lbai/200 gals., and 14 days at rates above this level. The registrant submits four trials [2 in NJ, LA, OH] of 5 to 7 applications at 0.9 lbai/100 gals. (exaggerated rate). All tomato samples at 7 days PHI were less than the established tolerance level of 0.2 ppm, including a sample receiving exaggerated rate of 2 applications of 16 lbai/100 gals. Based upon these data, we are able to conclude that the established tolerance of 0.2 ppm and the 7 and 14 day preharvest intervals are appropriate.

Item 6: Residue data for small grain crops by aerial application methods.

The Registration Standard for Methomyl requested residue data for aerial application of methomyl to small grains. Established tolerances are 1 ppm for grain and 10 ppm for forage, hay and straw of small grains, based upon a use rate of 0.45 lbai/A and a 7 day PHI. Four trials are submitted [MD, DE, OH, MT] for wheat receiving 2 applications of 0.5 to 1.0 (exaggerated) pounds active per acre. Residues in wheat grain from the normal application rates (0.45 lbai/A) were less than 1 ppm at 7 days, although exaggerated treatments (2X rates) showed 1.1 ppm at 7 days. Residues in wheat straw were less than the 10 ppm tolerance (actually 7 ppm) at 7 days PHI from 1X applications, while 2x applications showed levels at 10 ppm. Thus, the submitted aerial application data for grain and straw of small grains indicates that the currently established tolerances are not likely to be exceeded by the current use on small grains. This deficiency is resolved.

Item 7: Tobacco.

We have previously requested and reviewed residue data for tobacco smoke (R. Kent, 11/29/82). Since the submitted data were graphs, we then requested experimental procedures and raw data be submitted. The now submitted raw data confirm previously submitted graphical data that residues of methomyl in tobacco smoke are proportional to the amount of methomyl present on the unsmoked tobacco. We conclude that this deficiency is resolved.

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Item 8 Corrosivity Testing:

The corrosivity of two formulations ("Lannate" L and "Lannate" LV) to Type 304, Type 316 and Placite 3066 stainless steel are reported. We conclude the data has been submitted.

Item 9 is neither Residue nor Product Chemistry data and therefore will not be discussed herein. This involves re-entry intervals and is under the purview of EAB.

Item 10: Volatility Data for "Lannate" L and "Lannate" LV. The volatility of "Lannate" L and "Lannate" LV are reported to be 13.2 and 6.2 at 55°C respectively. Further, the vapor pressure of "Lannate" L and "Lannate" LV are reported in 5°C increments between 20°C and 110°C. We conclude the data has been submitted.

Other Considerations:

In addition, the registrant provides a table of responses to EPA letter of 2/6/86. In regard to Item 171D-4 Residue Data Cabbage, the response is that the data requirement pertains to dust formulations, and since the registrant does not have a dust formulation, there is no data gap. We concur with the registrants conclusion that there is no data gap since the registrant does not have a dust formulation.

The registrant will submit residue data for nectarines by 4/2/86. The Registration Standard does not report a data gap for residues of methomyl on nectarines.

Product Chemistry Data Gaps:

The registrant discusses the Product Chemistry Data Requirements for "Lannate" formulations. The EPA Reg. No. for these seven formulations are:

EPA Reg. No. 352-366, Technical Methomyl;
EPA Reg. No. 352-342, "Lannate" Insecticide;
EPA Reg. No. 352-361, Methomyl for Manufacturing;
EPA Reg. No. 352-362, "Lannate" WP;
EPA Reg. No. 352-364, "Lannate" G;
EPA Reg. No. 352-370, "Lannate" L; and
EPA Reg. No. 352-384, "Lannate" LV.

61-2 Statement of Composition:

Registrant will submit this information for EPA Reg. No. 352-366, Technical Methomyl, by 4/2/86. This is not a data gap for the other six formulations above.

61-3 Discussion of Ingredients Formation:

This is not a data gap for EPA Reg. No. 352-366, Technical Methomyl.

The discussion of ingredient formation can be found in the attached Confidential Appendix.

62-1 Preliminary Analysis:

The registrant will submit this information for EPA Reg. No. 352-366, Technical Methomyl by 4/2/86. This data gap does not pertain to the other methomyl formulations. This data gap has not been satisfied.

Product Labeling:

The labeling changes are not Residue or Product Chemistry and therefore are not pertinent to our considerations.

62-2 Certification of Limits:

The registrant will submit this information for EPA Reg. No. 352-366, Technical Methomyl; EPA Reg. No. 352-342, "Lannate" Insecticide; EPA Reg. No. 352-361, Methomyl for Manufacturing; EPA Reg. No. 352-362, "Lannate" WP; EPA Reg. No. 352-370, "Lannate" L; and EPA Reg. No. 352-384, "Lannate" LV by 4/2/86. This data gap has not been satisfied yet. Since the registant does not manufacture EPA Reg. No. 352-364, "Lannate" G, no information is submitted. The registrant suggests that this information should be submitted by the manufacturer of the granular formulations.

See Confidential Appendix for review of certification of limits for EPA Reg. No. 352-342, "Lannate" Insecticide; EPA Reg. No. 352-370, "Lannate" L; and EPA Reg. No. 352-384, "Lannate" LV. This data gap has been resolved for these three products.

This data gap has not been satisfied for these products: EPA Reg. No. 352-366, Technical Methomyl; EPA Reg. No. 352-361, Methomyl for Manufacturing; EPA Reg. No. 352-362, "Lannate" WP.

63-10 Dissociation Constant:

This data requirement has only been imposed recently upon EPA Reg. No. 352-361, Methomyl for Manufacturing, in the memo of W. T. Chin (9/15/85). Upon reconsideration, we believe it is appropriate to waive this data requirement. Thus, this recent deficiency is resolved.

63-14 Oxidizing/ Reducing Reaction:

The registrant states that neither methomyl nor the ingredients

in the liquid formulations EPA Reg. No. 352-370, "Lannate" L, and EPA Reg. No. 352-384, "Lannate" LV contain chemicals which would undergo oxidation or reduction reaction, and therefore the data gap should be waived. We agree and recommend that the data gap be waived. Thus, this deficiency is resolved.

63-17 Storage Stability:

The registrant states that storage stability data for EPA Reg. No. 352-362, "Lannate" WP are not available, but its storage stability should be similar to that of technical methomyl and to other dry powdered formulations of methomyl containing common inert ingredients. Data in this regard has been previously furnished to EPA, and this data gap should be waived. We agree that this data gap should be waived. Thus, this deficiency is resolved.

63-20 Corrosion Characteristics:

This data gap is not pertinent to the non-liquid formulations of methomyl: EPA Reg. No. 352-366, Technical Methomyl; EPA Reg. No. 352-342, "Lannate" Insecticide; EPA Reg. No. 352-361, Methomyl for Manufacturing; EPA Reg. No. 352-362, "Lannate" WP; and EPA Reg. No. 352-364, "Lannate" G.

Data are reviewed under Item 8. This data gap is resolved.

CONCLUSIONS and RECOMENDATIONS:

1. The following data gaps remain outstanding:

61-2 Statement of Composition: EPA Reg. No. 352-366, Tech. Methomyl.
62-1 Preliminary Analysis: EPA Reg. No.352-366, Tech. Methomyl.
62-2 Certification of Limits for:
EPA Reg. No. 352-366, Technical Methomyl;
EPA Reg. No. 352-361, Methomyl for Manufacturing;
EPA Reg. No. 352-362, "Lannate" WP;

The manufacturer of EPA Reg. No. 352-364, "Lannate" G should submit certified limits for this product.

EPA Form 8570-4, Revised 2-85, should be used in submitting data on chemical composition or certified limits.

2. The following data gaps have been resolved:

61-2 Statement of Composition:
EPA Reg. No. 352-361, Methomyl for Manufacturing.
61-3 Discussion of Ingredients Formation:
EPA Reg. No. 352-342, "Lannate" Insecticide
EPA Reg. No. 352-361, Methomyl for Manufacturing.
EPA Reg. No. 352-362, "Lannate" WP.
EPA Reg. No. 352-364, "Lannate" G

EPA Reg. No. 352-370, "Lannate" L
EPA Reg. No. 352-384, "Lannate" LV.

62-1 Preliminary Analysis:
EPA Reg. No. 352-361, Methomyl for Manufacturing.
62-2 Certification of Limits for:
EPA Reg. No. 352-342, "Lannate" Insecticide;
EPA Reg. No. 352-370, "Lannate" L; and
EPA Reg. No. 352-384, "Lannate" LV.
63-20 Corrosion Characteristics for:
EPA Reg. No. 352-370, "Lannate" L; and
EPA Reg. No. 352-384, "Lannate" LV.

3. The following data gaps are waived:

63-10 Dissociation Constant,
EPA Reg. No. 352-361, Methomyl for Manufacturing.
63-14 Oxidizing/ Reducing Reaction:
EPA Reg. No. 352-370, "Lannate" L,
EPA Reg. No. 352-384, "Lannate" LV
63-17 Storage Stability:
EPA Reg. No. 352-362, "Lannate" WP.

4. The registrant intends to submit additional residue data for methomyl on nectarines.

TOX should respond to the deferral made to them in the Confidential Appendix.

5. Subsequent to the preparation of the methomyl registration standard, the Agency received information that acetamide may be a metabolite of methomyl. We have raised the question as to whether acetamide is a metabolite in recent methomyl pesticide petition actions. TOX Branch has also requested additional information regarding acetamide. The registrant(s) should determine whether acetamide is a metabolite of methomyl. If acetamide is determined to be a metabolite and if TOX is concerned with its presence, then enforcement methodology and residue data may be needed for residues of acetamide on those crops with established tolerances.

Attachment: Confidential Appendix page 1 of 1
(Attached copy to: R.F., RS (Methomyl), PMSD/ISB, TOX Branch (Coberly), R.D. P.M.12 (Schnaubelt), Rev. only)
cc: R.F., Circ., RS (Methomyl), PMSD/ISB, TOX, RD, EEB, EAB, Rev.
TS-769:RCB:Reviewer:RWCook:4/18/86:RCB:CM#2:RM:810
RDI:RSQuick:Date:4/22/86:RDSchmitt:Date:4/24/86

Methomyl residue chemistry review

Page 8 is not included in this copy.

Pages _____ through _____ are not included in this copy.

The material not included contains the following type of information:

___ Identity of product inert ingredients

___ Identity of product impurities

X Description of the product manufacturing process

___ Description of product quality control procedures

___ Identity of the source of product ingredients

___ Sales or other commercial/financial information

___ A draft product label

___ The product confidential statement of formula

___ Information about a pending registration action

___ FIFRA registration data

___ The document is a duplicate of page(s) _____

___ The document is not responsive to the request

The information not included is generally considered confidential by product registrants. If you have any questions, please contact the individual who prepared the response to your request.
