

US EPA ARCHIVE DOCUMENT

290301

OCT 14 REC'D
HDB

12/10

Date Out EFB: 12/6/82

To: Jay Ellenberger
Product Manager 21
Registration Division (TS-767)

From: Samuel M. Creeger, (Acting) Head
Review Section No. 1
Environmental Fate Branch
Hazard Evaluation Division (TS-769)

Attached please find the environmental fate review of:

Reg./File No.: 352-361

Chemical: Methomyl

Type Product: I

Product Name:

Company Name: Du Pont

Submission Purpose: response to standard

ZBB Code:

ACTION CODE: 606

Date In: 10/13/82

EFB # 9

Date Completed:

TAIS (level II) 46
Days 2

Deferrals To:

Ecological Effects Branch

Residue Chemistry Branch

Toxicology Branch

Date of EFB 12/6/82

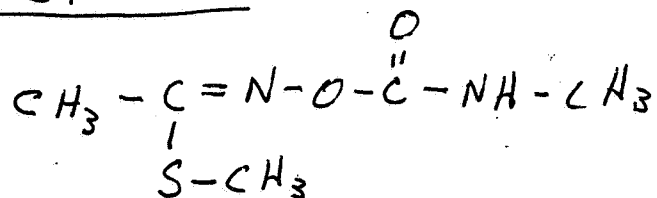
1.0 Introduction

Chemical Name: S-Methyl-N-[(methylcarbamoyl)oxy]-thioacetimidate

Trade Names: ~~Methomyl~~, Lannate, Nudrin

Common Name: Methomyl

Chemical Structure:



Reference: Du Pont Response to EPA Generic Data Requirements, specifically, Environmental Fate "Data Gaps".

Memo dated May 26, 1982

2.0 Discussion

^{since 11/} Items 4 & 5: Hydrolysis/Photolysis. Study referred to by du Pont as # 115-397 was invalidated because the hydrolysis study was not run in the dark and the photolysis study did not include dark controls. There were other less important problems.

Upon reevaluation of the studies (and data), the fact that only 9% of the initial methomyl appeared to hydrolyze in 168 days (even if a combination of hydrolysis & photolysis) and exposure to sunlight for up to 120 days failed to indicate photolytic decomposition, we agree to withdraw the request for further testing. This is not meant to "bless" the unscientific methodology followed by the researchers. It is also to be noted that the study Decomposition in Soil, cited by du Pont as having been conducted in sunlight, did not address photolysis.

Item 6.

Aerobic soil metabolism. Study MRID 00008844 gave a half-life prediction for methomyl in silt loam and an unknown (unclassified) California soil. Data gathered from muck and sandy loam soils were unreliable. The guidelines under which this standard was prepared requested tests to be made on 3 or more soils. Later editions of the guidelines are less stringent. Consequently we are accepting the data for silt loam as being representative for methomyl in agricultural soils.

Item 7. No ~~are~~ anaerobic soil metabolism study was found in our literature search. No anaerobic aquatic studies were available. Therefore, either an anaerobic soil or an anaerobic aquatic study will be required.

Items 8 & 9. Du Pont to supply leaching and vapor pressure data.

Item 10. Adsorption/Desorption. Study ~~was~~ ^{by} Fung and Uren was invalidated because the soil was "equilibrated" with saturated CaSO_4 prior to introduction of methomyl. Ca^{++} may have bound to each anionic site, altering the degree of adsorption of methomyl. Adsorption coefficients should be determined using one soil sediment and at least 4 concentrations of methomyl in distilled water. Du Pont should repeat test as suggested but under an acceptable method.

- Item 11. Field dissipation. Although the Agency has specified that "the test substance shall be a typical end-product", e.g., typical of a formulation category, and the studies failed to identify the C^{14} methomyl as belonging to a formulation category, the registrant's argument that the data requirement has been satisfied is accepted.
- Item 12. Terrestrial forest field dissipation. Since the environmental conditions in a forest differ from those of the field test sites (11 above), the waiver request for terrestrial forest field dissipation studies is denied.
- Item 13. Rotational crops. Because of the apparent rapid aerobic soil metabolism of methomyl, we agree to waive the requirement for this test.
- Item 14. Fish accumulation. The study cited by DuPont was not available to the reviewer. If, as DuPont contends, data are available to show that the methanol-water partition coefficient is 1.08, and the data are supplied, we will withdraw the requirement for this test.

Item 15. Reentry. The Agency maintains that the registrant must propose an acceptable reentry interval which may be based upon any of the following:

- a) existing state reentry intervals;
- b) data on dissipation of foliar residues (decline curve) and on human exposure to those residues; c) determination of that time beyond which there are no detectable foliar residues, under appropriate climatic conditions.

Note that the California Department of Food and Agriculture methomyl reentry interval is 2 days (48 hours).

CONCLUSIONS: Conclusions are given following the discussion of each item in the registrant's memo.

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