

US EPA ARCHIVE DOCUMENT



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

3-1-93
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EFGWB# 93-0371
DP Barcode D187423

MEMORANDUM:

SUBJECT: Updated table of data requirements for Methomyl (Case No. 0028, PC Code 090301)

TO: Linda Propst
Reregistration Branch
Special Review and Reregistration Division (H7508W)

FROM: José Luis Meléndez, Chemist *José Luis Meléndez 2/25/93*
Environmental Chemistry Review Section #2/EFGWB/EFED

THROUGH: Emil Regelman, Supervisory Chemist
Environmental Chemistry Review Section #2/EFGWB/EFED *(D)*

and

Henry Jacoby, Chief *Henry Jacoby 3/1/93*
Environmental Fate & Ground Water Branch/EFED (H7507C)

Attached is an updated table of data requirements for Methomyl. The table was updated to indicate those data requirements that do not apply to methomyl since the registrant withdrew all aquatic uses. The table also indicates waived data requirements after evaluation of the results of vapour pressure for the chemical.

BACKGROUND:

Methomyl is a broad-spectrum insecticide registered for use on a variety of terrestrial food crops including onions, soybeans, cotton, peas, beans, lentils, corn, peanuts, other field crops, and certain fruits. It is also used in nonfood crops (tobacco, ornamental plants, and lawn turf). Single active ingredient formulations include soluble concentrate/liquid and soluble concentrate/solid. The general use patterns of methomyl are terrestrial non-food, and terrestrial food.

EFGWB received a package containing a letter from the registrant indicating discrepancies with EFGWB records. EFGWB updated and corrected the table of the data requirements for Methomyl accordingly (see attachment).

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jlm

Data Requirements for Methomyl

Data Requirements and Guidelines Reference No.	Status of Data Requirement
<u>Degradation - Lab.:</u>	
161-1 Hydrolysis	Satisfied ¹
161.2 Photolysis in Water	Satisfied ²
161.3 Photolysis in Soil	Satisfied ³
161-4 Photodegradation in Air	Waived ⁴
<u>Metabolism Studies - Lab.</u>	
162-1 Aerobic Soil Metabolism	Satisfied ⁵
162-2 Anaerobic Soil Metabolism	Satisfied ⁶
162-3 Anaerobic Aquatic Metabolism	N/A ⁷
162-4 Aerobic Aquatic Metabolism	N/A ⁷
<u>Mobility Studies - Lab.</u>	
163-1 Mobility in Soil	Satisfied ⁸
163-2 Volatility from Soil (Lab.)	Waived ⁴
163-3 Volatility from Soil (Field)	Waived ⁴
<u>Field Dissipation Studies</u>	
164-1 Terrestrial (Short-term)	Satisfied ⁹
164-2 Aquatic/Sediment	N/A ⁷
164-5 Terrestrial (Long-Term)	Waived ¹⁰
<u>Accumulation Studies</u>	
165-1 In Confined Rotational Crops	Satisfied ¹¹
165-3 In Irrigated Crops	N/A ⁷
165-4 In Fish	Waived ¹²
165-5 In Aquatic, Non-target Organisms	N/A ⁷
<u>Other</u>	
166-1/-2/-3 Ground Water Monitoring Studies	Not Satisfied ¹³

FOOTNOTES:

1. Methomyl was relatively stable in pH 5 and 7 solutions at 25°C. A half-life of 30 days was observed for the pH 9 solution. The only degradate was S-methyl-N-hydroxythioacetimidate (MRID# 00131249).
2. Methomyl photodegraded with a half-life of 1 day in sterile aqueous pH 5 solution. The major degradate was acetonitrile, the minor degradate is S-methyl-N-hydroxythioacetimidate (MRID# 00161885).
3. Methomyl photodegraded with a half-life of 34 days on silty clay loam soil irradiated with natural sunlight at 24-28°C. The major degradate was acetonitrile (MRID# 00163745).
4. The vapour pressure of methomyl is 5.4×10^{-6} , EFGWB concurs with a waiver for the data requirement (EFGWB# 90765).
5. Methomyl degraded with a half-life of 30-45 days in silt loam soil incubated at 25°C. The major degradate was $^{14}\text{CO}_2$. A minor degradate was S-methyl-N-hydroxythioacetimidate (MRID# 00008568).
6. Methomyl degraded fast under anaerobic soil conditions. In the early stages methomyl was not detected and acetonitrile was the initial degradation product. $^{14}\text{CO}_2$ was the final degradation product with more than 90% of the applied radioactivity at 8 days posttreatment (MRID# 00073214).
7. These data requirements do not apply since the registrant no longer supports aquatic uses for the chemical.
8. Methomyl and its degradate S-methyl-N-hydroxythioacetimidate were very mobile on sandy loam, silty clay loam, and silt loam soil TLC plates, with R_f values ranging from 0.64 to 0.93. In batch equilibrium studies, methomyl was very mobile in two sandy loams, a silt loam, and a silt soil with K_{ads} values from 0.5 to 2.8 (MRID#'s 00044306 and 00161884).
9. Validated results show methomyl does not leach more than 15 inches over 5 months. In a muck soil no residues of methomyl were detected (MRID#'s 00009324 and 00009326). Supplementary studies show that in California at an application rate of 9 lb ai/A, methomyl dissipated with a registrant calculated half-life of 54 days (MRID#'s 41623901 and 41623902). In Mississippi, at an application rate of 4 lb ai/A, methomyl dissipated with a half life of 4-6 days. Methomyl remained primarily in the upper 0-15 cm of soil (MRID# 42288001).
10. Waived based upon results of satisfactory short term studies.
11. Beets and cabbage planted 30 and 120 days posttreatment had total radioactivity ranging from 0.04 to 0.15 ppm. Sunflower seeds ranged from 1.5 to 2.0 ppm. The application rate was four times the maximum single use rate (MRID# 00019947).
12. The octanol/water partition coefficient (K_{ow}) for methomyl ranges from 1.29 to 1.33. This value is significantly less than 1000. Chemicals with this low K_{ow} are not expected to bioconcentrate. EFGWB concurs with a waiver of the Bioaccumulation in Fish data requirement for methomyl.
13. Required because the detection of methomyl in ground water has been confirmed, but data are insufficient to assess the extent and degree of groundwater contamination (EFGWB 90-0410).

DP BARCODE: D187423

REREG CASE #

CASE: 819319
SUBMISSION: S434383

DATA PACKAGE RECORD
BEAN SHEET

DATE: 01/29/93
Page 1 of 1

* * * CASE/SUBMISSION INFORMATION * * *

CASE TYPE: REREGISTRATION ACTION: 629 GENERAL CORR - REREGIS 100.00 %
CHEMICALS: 090301 Methomyl

ID#: 090301

COMPANY:

PRODUCT MANAGER: 73 LINDA PROPST 703-308-8165 ROOM: CS1 2L5
PM TEAM REVIEWER: JOANNE EDWARDS 703-308-8046 ROOM: CS1 2D6
RECEIVED DATE: 01/14/93 DUE OUT DATE: 04/14/93

* * * DATA PACKAGE INFORMATION * * *

DP BARCODE: 187423 EXPEDITE: N DATE SENT: 01/29/93 DATE RET.: / /
CHEMICAL: 090301 Methomyl
DP TYPE: 001 Submission Related Data Package
ADMIN DUE DATE: 04/14/93 CSF: N LABEL: N

ASSIGNED TO	DATE IN	DATE OUT
DIV : EFED	02/10/93	/ /
BRAN: EFGB	/ /	/ /
SECT:	/ /	/ /
REVR :	/ /	/ /
CONTR:	/ /	/ /

* * * DATA REVIEW INSTRUCTIONS * * *

ATTN: J. MELENBEZ -
DUPONT RECORDS DISAGREE
WITH YOURS. PLEASE REVIEW
& CALL IF YOU NEED
SPECIFIC REVIEWS, LETTERS
ETC. JOANNE (308-8066)

* * * ADDITIONAL DATA PACKAGES FOR THIS SUBMISSION * * *

DP BC	BRANCH/SECTION	DATE OUT	DUE BACK	INS	CSF	LABEL
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