Shaughnessy No.: 029001

Date Out of EFGWB: MAR 24 1989

To: Susan Lewis
Acting Product Manager #21
Fungicide-Herbicide Branch
Registration Division (H7505C)

From: Emil Regelman, Supervisory Chemist
Environmental Review Section #2
Environmental Fate & Ground Water Branch (H7507C)

Thru: Henry Jacoby, Acting Chief
Environmental Fate & Ground Water Branch
Environmental Fate & Effects Division (H7507C)

Attached, please find the EFGWB review of...

Reg./File # : 464-511

Chemical Name: 1,3-dichloropropene

Type Product : Nematicide/Fungicide/Insecticide/Herbicide

Product Name : Telone II

Company Name : Dow Chemical Company

Purpose : Review time extensions requested by Dow Chemical Company for combined field volatility and soil dissipation studies.

Date Received: 1/13/89 Action Code(s): 655

Date Completed: 3/22/89 EFGWB #(s) : 90183

Total Reviewing Time:(decimal days): 0.5 days

Deferrals to: _____ Ecological Effects Branch, EFED

_____ Science Integration & Policy Staff, EFED

_____ Non-Dietary Exposure Branch, HED

_____ Dietary Exposure Branch, HED

_____ Toxicology Branch-HFA Support, HED

1. CHEMICAL: Common name:

Dichloropropene

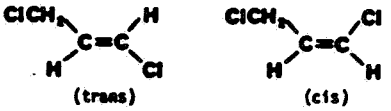
Chemical name:

1,3-Dichloropropene

Trade name(s):

Telone II Soil Fumigant

Structure:



Formulations:

94% Ready-to-use (RTU)

Physical/Chemical properties:

Molecular formula:	$C_3H_4Cl_2$.
Molecular weight:	111.
Physical state:	Colorless to straw-colored liquid.
Vapor pressure:	22 mm Hg at 20°C.
Solubility:	Water, 0.1%.

2. TEST MATERIAL:

Telone II, a 94% RTU

3. STUDY/ACTION TYPE:

Review a 4-month time extension request (until April 1, 1989) for submission of field volatility (§163-3) and soil dissipation (§164-1) studies.

4. STUDY IDENTIFICATION:

N/A.

5. REVIEWED BY:

Padma Datta, Ph.D.
Chemist
Environmental Review Section #2
EFGWB/EFED/OPP

Signature: PKDatta

Date: 3/23/89

6. APPROVED BY:

Emil Regelman
Supervisory Chemist
Environmental Review Section #2
EFGWB/EFED/OPP

Signature: ER

Date: MAR 24 1989

7. CONCLUSION:

EFGWB concurs with the time extensions of 4 months (until April 1989) requested by Dow Chemical Company to complete both the field volatility (§163-3) and soil field dissipation (§164-1) studies, based on both administrative and technical considerations which are reasonable.

8. RECOMMENDATION:

EFGWB recommends RD inform Dow Chemical Company that the 4-month time extensions requested for submission of these two environmental fate studies are reasonable, and EFGWB has no objection to the Agency's granting these time extentions.

9. BACKGROUND:

On 1/11/89, Dow Chemical Company requested time extensions of four months (until April 1989) for submission of field volatility (§163-3) and soil field dissipation (§164-1) studies. Dow is experiencing unavoidable losses of technical personnel time to complete the studies which require analyses of a large quantity of samples generated during the experimental periods of both studies.

10. DISCUSSION OF INDIVIDUAL TESTS OR STUDIES:

N/A.

11. COMPLETION OF ONE-LINER:

See attached one-liner.

12. CBI APPENDIX:

All data reviewed here are considered CBI by the registrant and must be treated as such.

ENVIRONMENTAL FATE & GROUND WATER BRANCH
PESTICIDE ENVIRONMENTAL FATE ONE LINE SUMMARY

Common Name: **1,3-DICHLOROPROPENE** Date: 03/22/89
Chem. Name : 1,3-DICHLOROPROPENE
:
Shaugh. # : 29001 CAS Number: 542-75-6
Type Pest. : NEMATICIDE, FUNGICIDE, INSECTICIDE, HERBICIDE
Formulation: SINGLE ACTIVE INGREDIENT, 94% RTU
Uses : SOIL FUMIGANT, APPLIED PRIOR TO PLANTING TERRESTRIAL-FOOD
: AND NON-FOOD USE SITES.
:

Empir. Form: $C_3H_4Cl_2$ VP (Torr): 27.3
Mol. Weight: 110.9 Log Kow : 25.00
Solub.(ppm): 2500 (OR 1000) @ 20 C Henry's : 1.8E-3

Hydrolysis (161-1)
pH 5:[ ] T1/2 AT 20 C =13.5 DAYS
pH 7:[ ] INDEPENDENT OF pH
pH 9:[ ]
pH :[ ] pH5.5, 2 C, 90-100 DAYS
pH :[ ] " 15 C, 11-13 DAYS
pH :[ ] " 29 C, 2 DAYS

Photolysis (161-2, -3, -4)
Air :[*] DOES NOT DEGRADE
Soil :[ ] (N.B. THERE IS CONTRA-
Water:[ ] DICTORY EVIDENCE CITED
:[ ] UNDER COMMENTS)
:[ ]
:[ ]

MOBILITY STUDIES (163-1)

Soil Partition (Kd)
1.[*] LOAMY SAND .23
2.[*] SAND .32
3.[*] CLAY 0.42 AND 1.09
4.[ ] AVG MAX KOC VALUES WERE 20 FOR
5.[ ] SAND, 25 FOR LOAMY SAND, AND
6.[ ] 41 AND 42 FOR TWO CLAY SOILS

Rf Factors
1.[ ]
2.[ ]
3.[ ]
4.[ ]
5.[ ]
6.[ ]

METABOLISM STUDIES (162-1,2,3,4)

Aerobic Soil (162-1)

		SOIL	%OM	C	pH	T1/2DA
1.	[*]	SOIL	%OM	C	pH	T1/2DA
2.	[ ]	SPIER SL	11.6	15	?	22
3.	[ ]	SPIER SL	11.1	15	?	37
4.	[ ]	HAREN SL	3.6	15	5.0	22
5.	[ ]	BOGERCIE SL	3.6	20	5.6	25
6.	[ ]	CLAY	1.1	20	6.8	3
7.	[ ]	CLAY	1.8	20	7.2	8

Anaerobic Soil (162-2)

		SOIL	TEMP	T 1/2
1.	[*]	SOIL	TEMP	T 1/2
2.	[ ]	SILT CLAY LOAM	15 C	9.1 DA
3.	[ ]	" " "	25 C	2.4 DA
4.	[ ]	SANDY LOAM	15 C	7.7 DA
5.	[ ]	" "	25 C	2.4
6.	[ ]			
7.	[ ]			

Aerobic Aquatic (162-4)
1.[ ]
2.[ ]
3.[ ]
4.[ ]

Anaerobic Aquatic (162-3)
1.[*] AT pH 6.9-7.5, T1/2=20 DAYS
2.[ ]
3.[ ]
4.[ ]

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[*] - Acceptable Study. [#] = Supplemental Study

Common Name: **1,3-DICHLOROPROPENE** Date: 03/22/89

VOLATILITY STUDIES (163-2,3)

[ ] Laboratory:
[ ] Field:

DISSIPATION STUDIES (164-1,2,3,5)

Terrestrial Field (164-1)

1.[ ] 1,3-D APPLIED AT 342 LB AIA DECLINED FROM A MAX OF 130,000
2.[ ] PPB IN .30-.45 M LAYER, IMMEDIATELY AFTER TREATMENT, TO
3.[ ] <10 PPB (DETECTION LIMIT) IN ANY SOIL LAYER AT 71 DAYS; THIS
4.[ ] WAS IN A FIELD PLOT OF SAND SOIL IN CALIFORNIA.
5.[ ]
6.[ ]

Aquatic (164-2)

1.[ ]
2.[ ]
3.[ ]
4.[ ]
5.[ ]
6.[ ]

Forestry (164-3)

1.[ ]
2.[ ]

Other (164-5)

1.[ ]
2.[ ]

ACCUMULATION STUDIES (165-1,2,3,4,5)

Confined Rotational Crops (165-1)

1.[ ]
2.[ ]

Field Rotational Crops (165-2)

1.[ ]
2.[ ]

Irrigated Crops (165-3)

1.[ ]
2.[ ]

Fish (165-4)

1.[ ]
2.[ ]

Non-Target Organisms (165-5)

1.[ ]
2.[ ]

Common Name: **1,3-DICHLOROPROPENE** Date: 03/22/89

GROUND WATER STUDIES (158.75)

1.[ ] 1,3-D NOT DETECTED BETWEEN 0 AND 170 DAYS POSTTREATMENT IN
2.[ ] FOUR WELLS LOCATED IN AND AROUND A FIELD PLOT OF SAND SOIL
3.[ ] TREATED AT 342 LBS AIA.

DEGRADATION PRODUCTS

1. NONE DETECTED IN LEACHED COLUMN STUDIES
2. 3-CHLOROALLYL ALCOHOL, IN FIELD DISSIPATION STUDIES DECLINED
3. FROM MAX OF 410 PPB IN THE .66-.81 M LAYER AT 7 DAYS POST-TREAT-
4. MENT TO <10 PPB IN ANY SOIL LAYER AT 71 DAYS.
5. PROPIONIC ACID AND AN UNKNOWN (CONTG. AN ALCOHOL OR CARBOXYL)
6. 3-CHLORO-2-PROPEN-1-OL IS PRODUCT OF HYDROLYSIS
7.
8.
9.
10.

COMMENTS

IN ANAEROBIC STUDIES, 1,3-D HAS AN AFFINITY FOR THE WATER PHASE OVER THE ORGANIC PHASE.

1,3-D EXPOSED TO 2/5 W GE SUNLAMP DEGRADED; T 1/2 = .5 TO 3.3 D

WELLS 65-1200 FEET IN SO. CAL. HAD NO 1,3-D OR CHLOROALLYL ALC.

WELLS IN SUFFOLK CO.(NY) HAD DETECTABLE 1,3-D AND 1,2-D 68 DAYS AFTER FUMIGATION OF FIELD WITH 140 L/HA; CONC PEAKED AT 83 DAYS AN PERSISTED FOR 138 DAYS.

DESPITE 7000 GAL SPILL IN CALIF, 1,3-D DECREASED TO <100 PPM IN 0-12"DEPTH 5.5 MOS LATER, AND WAS NEVER FOUND IN WELLS NEARBY.

References:
Writer : J. HANNAN