Shaughnessy No.: 29001

Date Out of EFGWB: 7/13/90

TO: Schnaubelt/H.T. Toma
Product Manager # 74
Registration Branch/SRRD (H7508C)

FROM: Henry P. Nelson, Acting Supervisory Chemist H Nelson
Environmental Chemistry Review #3
Environmental Fate and Groundwater Branch/EFED (H7507C)

THRU: Hank Jacoby, Chief
Environmental Fate and Groundwater Branch
Environmental Fate and Effects Division (H7507C)

Attached, please find the EFGWB review of:

Reg./File #(s): 454-511

Common Name: Dichloropropene

Chemical Name: 1,3-Dichloropropene

Type of Product: Nematicide/Fungicide/Herbicide/Insecticide

Product Name: Telone II

Company Name: DowElanco

Purpose: Review supplemental data to upgrade Field Dissipation study (MRID # 408555-01, reviewed 8/31/89)

Date Received: 3/5/90 Action Code: 661

EFGWB #(s): 90-0418 Total Reviewing Time: 2

Deferrals to: _____ Ecological Effects Branch/EFED
_____ Science Integration & Policy/EFED
_____ Non-Dietary Exposure Branch/HED
_____ Dietary Exposure Branch/HED
_____ Toxicology Branch I/HED
Toxicology Branch II/HED

1. CHEMICAL:

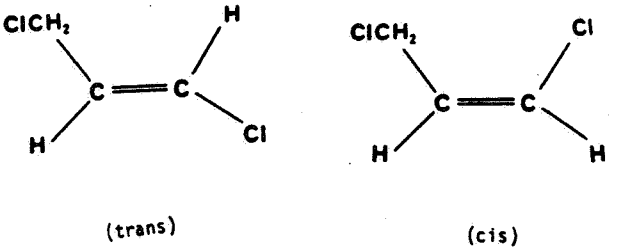
Common Name: Dichloropropene

Chemical Name: 1,3-Dichloropropene

Type of Product: Nematicide/Fungicide/Herbicide/Insecticide

Trade Name: Telone II

Chemical Structure:



Physical/Chemical Properties

molecular formula:	$C_3H_4Cl_2$
molecular weight:	111.9
physical state:	Colorless to straw-colored liquid.
aqueous solubility:	0.1%

2. TEST MATERIAL: N/A

3. STUDY/ACTION TYPE: Evaluate supplemental data for the purpose of upgrading previously reviewed Field Dissipation study (MRID # 408555-01 reviewed 8/31/89)

4. STUDY IDENTIFICATION: N/A

5. REVIEWED BY:

Bruce Kitchens, Chemist

Environmental Chemistry Review Section #3 Date: 7/3/90

Environmental Fate and Groundwater Branch/EFED

Bruce Kitchens

6. APPROVED BY:

Henry P. Nelson, Acting Supervisory Chemist

Environmental Chemistry Review Section #3 Date: 7/11/90

Environmental Fate and Groundwater Branch/EFED

H Nelson

7. CONCLUSIONS:

EFGWB concludes that the water and soil extracts of 1,3-dichloropropene and its degradates are stable under freezer storage conditions. This conclusion is reached by comparing the average of the spiked sample recoveries submitted

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with this action to the recoveries reported in the EFGWB reviewed Terrestrial Field Dissipation study (EFGWB # 89-0172 3/24/89 MRID # 408555-01).

8. RECOMMENDATIONS:

Inform registrant that the Terrestrial Field Dissipation study, previously mentioned above, can now be upgraded to an acceptable study, which now fulfills the data requirement, 164-1.

9. BACKGROUND:

Telone II is a broad spectrum soil fumigant, mainly applied as a preplant fumigant by chisel injection for nematode control. According to the 2986 Guidance for reregistration of this product, the predominant use of Telone II is on vegetables, field crops, citrus, fruit and nut trees, and ornamentals. Application rates are generally high ranging from 38.3 lb. a.i./A (field crops and vegetables) to 1000 lb.a.i./A (citrus, fruit and nut trees).

The registrant has submitted supplemental data to a previously reviewed study, Terrestrial Field Dissipation (MRID # 408555-01). This data is submitted in response to comments in the aforementioned review which states that the study was unacceptable in the fulfillment of the data requirement, 164-1, because no storage stability data was submitted after the samples taken were stored frozen until analysis.

In response to this comment the registrant states that storage stability data is unnecessary because all samples were extracted shortly after collection in preparation for analysis (stored frozen for 0-14 days with an average of 6-7 days prior to extraction). However, the storage data supplied by the registrant indicated that the soil and water extracts were stored frozen up to 43 days (average 13-16 days) prior to analysis. The registrant was advised to demonstrate that 1,3-dichloropropene and its degradates are stable during frozen storage in methanol and diethyl ether in order to upgrade the study to core status.

Subsequently, a review of the raw data file by the registrant revealed the presence of the requested data. The registrant with this action, has submitted freezer storage stability data. This data consists of QC recovery samples which were prepared and analyzed side-by-side with the unknown samples (See attached table).

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The following is a summary of the Status of the environment fate data requirements to support terrestrial food crop and terrestrial nonfood uses of 1,3-dichloropropene.

Data Requirement	Reviewer	Status MRID#
161-1 Hydrolysis	HLB 8/1/86	Acceptable Acc.# 262484 262730
161-2 Aqueous Photolysis	HLB	Not Required 8/1/86
161-3 Soil Photolysis	HLB	Not Required 8/1/86
161-4 Air Photolysis	PRD 3/29/88	Acceptable 403901-01
162-1 Aerobic Soil Metabolism	HLB 8/1/86	Unacceptable
162-2 Anaerobic Soil Metabolism	CE 10/14/87	Acceptable Acc.# 400259-01 Partially
163-1 Leaching & Adsorption/ Desorption	PRD 5/6/88	Acceptable 40538901
163-3 Field Volatility	PRD 8/31/89	Unacceptable 410577-01
164-1 Field Soil Dissipation*	PRD 3/29/89	Partially Acceptable 408555-01
164-1 Field Soil Dissipation**	BFK 7/3/90	Acceptable 413857-01
164-5 Long Term Field Soil Dissipation	---	Outstanding
165-1 Confined Rotational Crop	---	Conditionally Required
165-2 Field Rotational Crop	---	Conditionally Required
165-4 Accumulation in Fish	---	Conditional Required

* Represents a California site.
** Represents a Florida site.

10. DISCUSSION:

From the data presented in the enclosed table it is difficult to determine which samples were extracted (i.e., date of sample collection). For the water samples that were analyzed for cis and the trans-3-chloroallyl alcohol on 5/8/86 it could not be determined if these are replicate samples. For the soil samples analyzed on 7/8/87 for cis-1,3-dichloropropene, trans-1,3-dichloropropene, and 1,2-dichloropropane the data are quite variable and indicates poor precision and accuracy (accuracy is not determined empirically since the spike fortification levels are not supplied). The data analyzed on 12/11/87 again is quite variable and again these results indicate poor precision and accuracy.

There is a possible recording error in the column under data analyzed for 1,2-dichloropropane: date 3/20/76.

The reviewer reached his conclusion by averaging the recovery results from all of the total analyses made on each date. These recovery averages compared favorably with the recoveries reported in the original study (MRID# 408555-01, EFGWB # 89-0172).

11. COMPLETION OF ONE-LINER:

Updated through J. Hannan 7/3/90.

12. CBI INDEX:

Not applicable.

Extract Storage Time and Recovery From Fortified Samples

Compound	Date Analyzed	Days Stored	Spiked Sample Recovery %
	Water		
cis-3-chloroallyl alcohol	5/08/86	16 & 20	76, 69
	9/17/86	35	102
	11/18/86	39	52
	3/18/87	21	85
	7/10/87	37	105
	12/15/87	47	no data
trans-3-chloroallyl alcohol	5/08/86	16 & 20	78, 80
	9/17/86	35	93
	11/18/86	39	50
	3/18/87	21	72
	7/10/87	37	82
	12/15/87	47	no data
	Soil		
cis-3-chloroallyl alcohol	9/05/86	23	no data
	11/19/86	34	92, 96, 91, 108
	3/20/87	25	113, 109, 98, 98
	7/08/87	41	96, 97, 112, 88
	12/11/87	43	72, 77, 83, 85, 78
trans-3-chloroallyl alcohol	9/05/86	23	no data
	11/19/86	34	92, 92, 90, 106
	3/20/87	25	97, 109, 97, 104
	7/08/87	41	117, 93, 86, 90
	12/11/87	43	81, 75, 58, 70, 77
cis-1,3-dichloropropene	11/19/86	33	113, 109, 101, 108
	3/20/87	20	107, 81, 84, 96
	7/08/87	19	65,62, 91
	12/11/87	36	63, 57, 77, 107, 88
trans-1,3,dichloropropene	11/19/86	33	116, 111, 105, 108
	3/20/87	20	109, 104, 90, 109
	7/08/87	19	66, 62, 100
	12/11/87	36	59, 43, 77, 100, 87
1,2-dichloropropane	11/19/86	33	117, 111, 101, 102
	3/20/76	20	96, 99, 90, 98
	7/08/87	19	70, 61, 84
	12/11/87	36	62, 54, 77, 101, 93