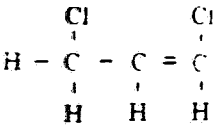
4-13-94

1. CHEMICAL: Dichloropropene (Telone II)

Chemical name: 1,3-Dichloropropene
Common name: Telone II; 1,3-D
Structure:



2. TEST MATERIAL:

Not Applicable.

3. STUDY/ACTION TYPE:

Review storage stability study data for soil samples.

4. STUDY IDENTIFICATION:

Title: Frozen Storage Stability of 1,3-Dichloropropene, 1,2-Dichloropropane and Chloroallyl Alcohol in Soil Over a 14-Day Period

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Identifying No.: 029001
DP Barcode: D180841
Date Sent to EFED: 07/23/92

5. REVIEWED BY:

Estella Waldman Signature: Estella Waldman
Hydrologist
OPP/EFED/EFGWB/Ground-Water Section Date: 3/29/94

6. APPROVED BY:

Elizabeth Behl Signature: E Behl
Section Head
OPP/EFED/EFGWB/Ground-Water Section Date: 4/13/94

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1,3-D has been detected in ground water in New York, Nebraska (retrospective study), Florida, Washington (retrospective study), California, and The Netherlands. Concentrations of 1,3-D in ground-water from normal field use in the U.S. range up to 270 ppb. In Riverside, California, illegal use of Telone in 1986 and 1987 resulted in six detections in one irrigation well ranging from 6.8 - 31 ppb. In The Netherlands, detections of 1,3-D were found in ground water under potato and flower bulb fields with concentrations ranging up to 2.5 ppb. 1,2-D has been detected in ground water in California, Connecticut, Florida, Hawaii, Massachusetts, Maryland, Nebraska, New York, Oregon, and Washington.

EPA determined that the registrant needed to evaluate the impact on ground water occurring from registered 1,3-D use by conducting retrospective ground-water monitoring studies at several different locations (EAB #6572; 6/23/86). Six monitoring sites were tentatively approved by the EPA (EFGWB #90565; 6/6/89). The sites were located in Jackson County, Florida; Grant County, Washington; Merced County, California; Monterey County, California; Wayne County, North Carolina; and Scotts Bluff County, Nebraska (EFGWB #90774, 12/21/89). Monitoring complications caused the site in Florida to be put on hold.

The registrant is preparing to conduct a small-scale prospective monitoring study in southern Florida that will be initiated in 1994. This study will be used to fulfill both State of Florida and EPA requirements for ground-water monitoring for 1,3-D in warm climates. Since 1,3-D use is widespread, the Ground Water Technology Section is concerned that the results from the Florida study will not be adequate for 1,3-D regulation and mitigation in cooler climates. For this reason, the GWTS recommends that at least one other prospective study be conducted in a northern climate.

All studies were completed and final reports submitted to the Agency. This submission describes the storage stability of the analytes in soil in the above studies.

10. DISCUSSION:

Aliquots of soil were collected from the retrospective study sites in North Carolina, California, Washington, and Nebraska prior to the Telone application. These aliquots were composited, and then divided into ten-gram aliquots. For the 1,3-D and 1,2-D analyses, each 10-gram aliquot was fortified with approximately 0.1 μg/g of each compound. For the alcohols, approximately 1.0 μg/g of each of the alcohols was used to fortify the soil sample. Unfortified aliquots were also prepared as controls.

Day 0 values were obtained using a different set of fortified samples and controls. The other fortified samples and controls were stored frozen and analyzed at 3, 7,

Environmental Fate & Effects Division
PESTICIDE ENVIRONMENTAL FATE ONE LINE SUMMARY
DICHLOROPROPENE
Last Update on January 3, 1994
[V] = Validated Study [S] = Supplemental Study [U] = USDA Data

Photolysis (161-2, -3, -4)
[ ] Water:
[ ] :
[ ] :
[ ] :

[V] Soil :RAPID, although study not required due to soil incorporation
[V] Air :Stable in air.

Aerobic Soil Metabolism (162-1)

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

Anaerobic Soil Metabolism (162-2)

	SOIL	TEMP	T 1/2
[V]	SILT CLAY LOAM	15 C	9.1 DA
[ ]	" " "	25 C	2.4 DA
[ ]	SANDY LOAM	15 C	7.7 DA
[ ]	" "	25 C	2.4
[ ]			
[ ]			

Anaerobic Aquatic Metabolism (162-3)
[S] AT pH 6.9-7.5, T1/2=20 DAYS
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]

Aerobic Aquatic Metabolism (162-4)
[ ]
[ ]
[ ]
[ ]
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[ ]
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Long-Term Soil Dissipation (164-5)
[ ]
[ ]

Accumulation in Rotational Crops, Confined (165-1)
[ ]
[ ]

Accumulation in Rotational Crops, Field (165-2)
[ ]
[ ]

Accumulation in Irrigated Crops (165-3)
[ ]
[ ]

Bioaccumulation in Fish (165-4)
[ ]
[ ]

Bioaccumulation in Non-Target Organisms (165-5)
[ ]
[ ]

Ground Water Monitoring, Prospective (166-1)
[ ] Study requested in 1991. Protocol not submitted as of 12/93 but
[ ] anticipate submission early in 1994.
[ ]
[ ]

Ground Water Monitoring, Small Scale Retrospective (166-2)
[ ] Five studies completed. Residues up to 3.86 ppb reported
[ ] in ground water at Nebraska site; degradates in four wells.
[ ] Residues below detection limit at Washington site. No detections
[ ] at two CA sites but few samples collected.

Ground Water Monitoring, Large Scale Retrospective (166-3)
[ ]
[ ]
[ ]
[ ]

Ground Water Monitoring, Miscellaneous Data (158.75)
[ ] Detections of 1,3-D in ground water in New York, Florida, and
[ ] California range from 0.279 to 270 PPB.
[ ]

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Comments

In anaerobic studies, 1,3-D has an affinity for the water phase over the organic phase.
1,3-D exposed to 275 W GE sunlamp degraded; T 1/2 = .5 to 3.3 DA.
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 and 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: EPA REVIEWS
Writer : PJH, KLP, EW

Attachment 2

DATA EVALUATION REPORT
REVIEW TIME WORKSHEET

Guideline 166-2

Bar code D180841

MRID
(one sheet per MRID) 423542-00
423542-01

Turn in the part below this line.

☐ Rereview of Contractor's study ☒ Original review	Total number of hours 3
Guidelines number 166-2	

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