2-5-88 EXPEDITE

APN

Shaughnessy Number: 029001

Date Out of EAB: 2/5/88

TO: Ms Lois Rossi
Product Manager 21
Registration Division (TS-767C)

FROM: Frank L. Davido, Chief (Jerome Blondell for)
Field Studies/Special Projects Section #5
Exposure Assessment Branch/HED (TS-769C)

THRU: Paul F. Schuda, Chief
Exposure Assessment Branch/HED (TS-769C)

Attached, please find the EAB review of:

Reg./File #: 464-511

Chemical Name: 1,3-DICHLOROPROPENE

Type Product: Soil Fumigant

Company Name: Dow Chemical Co.

Purpose: Expedited Review of PPE Performance Data

Tinsworth Memo to Barton- Received 12/28/87

Date Received: 12/31/87 Action Code: 605

Date Completed: 2/5/88 EAB #(s): 80356

Monitoring study requested: ___ Total Reviewing Time: 2 days

Monitoring study volunteered: ___

Deferrals to: _____ Ecological Effects Branch

_____ Residue Chemistry Branch

_____ Toxicology Branch

Date DEC 22 1987

REQUEST FOR EXPEDITE REVIEW

PM: 21/ROSSI

CHEMICAL: 1,3-Dichloropropene

EPA IDENTIFICATION NUMBER(S): Reg. No. 464-511

Acc.No. 263741

" " 262606

DATE(S) SENT TO HED: July 1986

HED BRANCH(ES) REQUIRED TO RESPOND TO EXPEDITE: EAB/HED

EXPEDITE DUE DATE: FEB 5, 1988

SPECIAL INSTRUCTIONS TO HED BRANCH(ES):

These Data should be reviewed in Frank Davido's Section in EAB/HED.

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REGISTRATION DIVISION DATA REVIEW RECORD

Confidential Business Information — Does Not Contain National Security Information (E.O. 12065) 44580 U.S

2/4/88

1. CHEMICAL NAME 1,3-Dichloro-5,5-Dimethyl Hydantoin (Halone (TM))

2. IDENTIFYING NUMBER	3. ACTION CODE	4. ACCESSION NUMBER
464-511	605	263741
		262606

TO BE COMPLETED BY PM

5. RECORD NUMBER: 213210
6. REFERENCE NUMBER: 4
7. DATE RECEIVED (EPA): 5/1/86 7/9/86
8. STATUTORY DUE DATE:
9. PRODUCT MANAGER (PM): Rossi (Tom A)
10. PM TEAM NUMBER: 21

14. CHECK IF APPLICABLE

- ☐ Public Health/Quarantine
- ☐ Minor Use
- ☐ Substitute Chemical
- ☐ Part of IPM
- ☐ Seasonal Concern
- ☐ Review Requires Less Than 4 Hours

TO BE COMPLETED BY PCB

11. DATE SENT TO HED/TSS: 12/23/87
12. PRIORITY NUMBER:
13. PROJECTED RETURN DATE: 2/4/88

15. INSTRUCTIONS TO REVIEWER

A. HED
- ☐ Total Assessment - 3(c)(5)
- ☐ Incremental Risk Assessment - 3(c)(7) and/or E.L. Johnson memo of May 12, 1977.

B. SPRD (Send Copy of Form to SPRD PM)
- ☐ Chemical Undergoing Active RPAR Review
- ☐ Chemical Undergoing Active Registration Standards Review

C. ☐ BFSD
D. ☐ TSS/RD
E. ☐ Other

F. INSTRUCTIONS

Risk Tinsworth memo to HED/E expedite reviews for chemical protective clothing materials data per Registration Standard

16. RELATED ACTIONS

17. 3(c)(1)(D)

☐ Use Any or All Available Information ☐ Use Only Attached Data
☐ Use Only the Attached Data for Formulation and Any or All Available Information on the Technical or Manufacturing Chemical.

18. REVIEWS SENT TO

☐ TB ☐ EEB ☐ EF ☐ PL
☐ RCB ☑ EFB ☐ CH ☐ BFSD

19. To	TYPE OF REVIEW	NUMBER OF ACTIONS: Registration	Petition	EUP	SLN	Sec. 18	Inert	MNR. USE	Other
HED	TOXICOLOGY								
HED	ECOLOGICAL EFFECTS								
HED	RESIDUE CHEMISTRY								
HED ✓	ENVIRONMENTAL DATE	(1)							
RD/TSS	CHEMISTRY								
RD/TSS	EFFICACY								
RD/TSS	PRECAUTIONARY LABELING								
BFSD	ECONOMIC ANALYSIS								

20. ☐ Label Submitted with Application Attached
21. ☐ Confidential Statement of Formula
22. ☐ Representative Labels Showing Accepted Uses Attached
23. Date Returned to RD (to be completed by HED)
24. Include an Original and 4 (four) Copies of This Completed Form for Each Branch Checked for Review.

COPY

DEC 23 1987

MEMORANDUM

SUBJECT: Expedited Reviews for DOW Chemical
1,3-Dichloropropene (Telone")
EPA Registration No. 464-511
Chemical Protective Clothing Materials Data
Received May 1 and July 9, 1986

FROM: Edwin F. Tinsworth, Director
Registration Division (TS-767C)

TO: Anne Barton, Acting Director
Hazard Evaluation Division (TS-769C)

I am requesting an expedited review of data related to the Registration Standard requirements on the fumigant, 1,3-dichloropropene.

These data [Acc. No. 263741] were received by the Agency on July 9, 1986 in response to the draft 1,3-dichloropropene Registration Standard. The data [Acc. No. 262606] received on May 1, 1986 support the latter submission, and should be reviewed concurrently. The data were forwarded to EAB/HED, since the footnote #2 on page 51 of the Standard indicated that the data would be reviewed by the Agency. There has been no response from EAB/HED regarding these data.

In November 1987, the registrant asked about the status of these data. They believe that the chemical protective clothing materials data would inform the Agency about quantitative permeation and breakthrough time for Telone" used on various materials used for protective clothing: slicker-suits, disposable suits, boots and gloves.

I am requesting that EAB/HED complete its review of these data [Accession nos. 262606 and 263741] by February 5, 1988.

Please return the completed reviews to Lois Rossi, Product Manager-21.

RD/FHB/PM-21:htt:12/22/87

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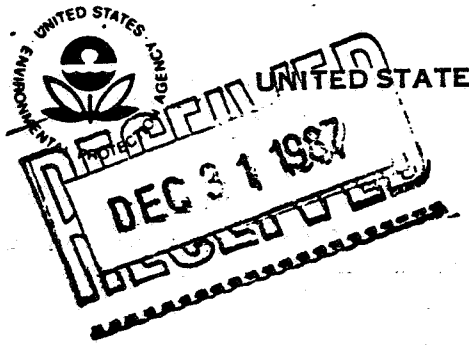

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

12/28

→ MSR (original memo & only the 1st 2 attachments -- one page each)
CC EAB (copy of memo & all attachments)

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

No need to copy the long 3rd attachment I don't need it & neither does MSS Thanks A

DEC 23 1987

MEMORANDUM

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1,3-Dichloropropene (Telone™)
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Please return the completed reviews to Lois Rossi, Product Manager-21.

HED

I. Registration Standard Action - 1,3-Dichloropropene (Telone)

II. Reg. No. - 464-511

III. Type of Action - Review of Data on Personnel Protective Equipment (PPE) Performance as Required by the Registration Standard

IV. Submitter - Dow Chemical Co.

Accession #262606

A.1. Type of Study - PERMEATION TESTING OF PROTECTIVE CLOTHING FOR TELONE II

B. Test Material - Commercial grade Telone II (Soil Fumigant-94% 1,3-dichloropropene, 6% inerts)

C. Protective Clothing Materials - The protective equipment tested represented a variety of barrier materials and commonly used products, including slicker suits, disposable suits, gloves, and boots.

D. Test Methodology - Dow Texas Operations' Test Method - Permeation Test Cell (similar to ASTM F739-81 closed loop method).

Comment - Equivalency of methods is not demonstrated, but believed to be close enough to be acceptable to EPA.

E. Test Results -

Gloves

In the category of heavy duty gloves, Viton and PVA showed very good chemical resistance. In the category of medium weight gloves, the Pioneer N-54 neoprene glove had decent resistance, but breakthrough time was greatly reduced (38 min.). The light duty gloves were all well below 5 minutes.

Protective suits

The chlorinated polyethylene (Chloropel), butyl rubber (Andover LL2000), and polyvinyl chloride (Graylite 20) showed relatively good chemical resistance (breakthrough times more than 10 min.).

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Of the disposable suits, the Saranex coated Tyvek showed the best potential protection.

Boots

All the boot materials tested had good to decent chemical resistance. The Beta 85-309 polyurethane boot showed the highest resistance (breakthrough time greater than 2 hours).

A.2. Type of Study - Respirator Cartridge Efficiency Study

B. Test Conditions - cis, trans-1,3-dichloropropene at 1000 ppm solvent concentration, 50% rel. humidity, and 53.3-liter/min flow

C. Test Samples - Organic Vapor Respirator Cartridges

D. Test Method - System designed to pass a vapor and air mixture through the cartridges with monitoring of the downstream concentration with a flame ionization detector (FID).

E. Test Results - Experimental breakthrough times were 85.5, 110, and 208 minutes for 1%, 10%, and 99%, respectively.

Accession #263741

A. Type of Study - Evaluation of Several PPE materials for Permeation Resistance to Telone C-17 Soil Fungicide and Nematicide

B. Test Material - Telone C-17 (chloropicrin, cis-1,3-dichloropropene and trans-1,3-dichloropropene)

C. Test Samples - Various disposable and reusable suits were obtained from W. Myles, Industrial Hygiene Services, Dow Texas Operation; J. Parsons, Michigan Division, and from F. O'Melia, Agricultural Products Dept. Gloves were also tested in this report.

D. Test Method - Permeation test cell equivalent to ASTM 739-81. GC analysis.

E. Test Results -

Reusable Suits

The chlorinated polyethylene (ILC Dover 2800) suit

had the most chemical resistance (approx. 16 min. for all three chemical components) of the suits tested. The PVC (Sta Safe SD-5624) and the neoprene (Marathon 800) suits had almost immediate breakthrough for all three chemical components. The butyl rubber (Andover LL200) suit showed intermediate resistance based on breakthrough times, but the permeation rates were 4-8 times less than those for the other suits. The authors concluded that the butyl rubber suit would offer better protection for long term exposures (greater than 30 min.).

Disposable Suits

Three disposable suits of construction identical to the three Tyvek based suits tested in the Telone II studies (Accession #262606) were tested against Telone C-17. The two laminated Tyvek suits (Saranex and polyethylene showed decent chemical resistance based on permeation rates. The uncoated Tyvek had very poor chemical resistance (basically all the chemical passed through in less than 8 min.).

Gloves

Light, medium, and heavy duty gloves were tested. The polyethylene (light) gloves (Edmont 32-125) had the best overall chemical resistance. The neoprene (Pioneer N-54) and the butyl rubber (North B-161) performed best in the medium weight category. The viton (North F-091) and the polyvinyl alcohol (Edmont 15-561) demonstrated very good chemical resistance (no breakthrough for the test period of 8 hours).

F. Comparison with Telone II Test Results - Using glove and suit materials identical to the present study, tests were conducted with Telone II to compare permeation results. The tested materials (2 glove and 1 suit type) gave results showing that dichloropropene permeation was the same whether exposed to Telone II or Telone C-17.

V. Reviewer's Comments and Acceptability of Data

The submitted data (Accessions #262606 and #263741) is acceptable to the Agency and meets the requirements of the Registration Standard Data Call-In.

There are, however, several issues that need to be followed up on and resolved in relation to PPE requirements for Telone labels.

(1) The studies submitted are very well done and I

commend the investigators, but how will this information benefit pesticide users? On page 6 of Accession #262606 the authors indicate that this performance data will be put into a product brochure for the users. I would like to meet with Dr. Spence and other appropriate Dow representatives to discuss this specific issue, as well as our efforts in the Office of Pesticide Programs and the Certification and Training Unit of the Office of the Assistant Administrator for Pesticides and Toxic Substances to develop training materials for a proposed Label Improvement Program (LIP) on PPE Labeling for Pesticides (Applicator, Mixer, Loader, etc.).

(2) I have received inquiries from the California Dept. of Food & Agriculture, the Dow Chemical Co., and, indirectly, from the EPA Regional Office in San Francisco through Ms. Sally MacDonald (primary author of the Core Safety Manual for Certifying Applicators) in regard to some new protective clothing label language, specifically:

"One-piece coveralls which have long sleeves and long pants constructed of laminated fabric as specified in the USDA/EPA Guide for Commercial Applicators" (MacDonald-same as above reference)

Basically, the incoming comments are that this new language is confusing to enforcement, users, etc. and not correct, both in reference to the Guide, as well as an impractical requirement to the pesticide user, mainly because laminated suits cause unacceptable heat stress levels to workers, they will not be used, and if Telone permeates these "barrier" materials and becomes "trapped", then more harm (dermally) is likely to occur, then if no laminated suit was worn at all.

I will be following up on this issue with CDFA, the Product Manager, and others within the month to clarify this issue. I also do not like the term liquid-proof, nor the recommendation for heavy-duty gloves. These items need to be resolved with the registrant also.

I will be contacting you (Product Manager) in a couple of weeks to discuss how to best address these issues. Please call if you have any questions regarding my review.

VI. Reviewer:

Alan P. Nielsen
Biologist
Exposure Assessment Branch
Hazard Evaluation Division
(TS-769C)

Tel. (703) 557-2242

FEB 5 1988