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Shell Oil Company



8EHQ-1193 - 12771

One Shell Plaza
P.O. Box 4320
Houston, Texas 77210



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November 17, 1993



8EHQ-93-12771
INIT 11/23/93

REC'D
OFFICE OF POLLUTION
PREVENTION AND TOXICS
93 NOV 23 AM 11:18

Document Processing Center (TS-790)
Office of Toxic Substances
U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, D.C. 20460
ATTN: 8(e) Coordinator

Dear Sir:

SUBJECT: ACUTE TOXICITY OF DOBANOL 91-8 TO THE FATHEAD MINNOW, DAPHNIDS, AND SELENASTRUM CAPRICORNUTUM.

The following information is submitted under TSCA 8(e).

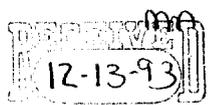
Acute aquatic toxicity data for Dobanol 91-8 (CAS Number 68439-46-3) to the fathead minnow, daphnids, and freshwater unicellular alga (Selenastrum capricornutum) were determined to be:

1. The fathead minnow: LC50, 96-hours, was calculated to be 13 mg/liter,
2. Daphnids: The EC50, 48 hours, was found to be 14 mg/liter,
3. Selenastrum capricornutum: The EC50, 96 hours, was 0.26 mg/liter.

Attached are copies of the preliminary data transmissions from the contracting Laboratory. The complete report will be sent to the Agency when available.

This report is filed to provide information EPA may find useful. In no way is it intended as a waiver of any rights or privileges belonging to Shell Oil Company as the reporting corporation, its agents or employees. The reporting corporation, its agents and employees, reserve the right to object to this report's use or admissibility in any subsequent judicial or administrative proceeding against the corporation, its agents or employees.

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This report has been compiled based on information available as of the date of filing. The corporation, its agents and employees reserve the right to supplement the data contained in this report, and to revise and amend any conclusions drawn therefrom.

This report contains no confidential business information.

Sincerely,

A handwritten signature in black ink, appearing to read "R. N. Shulman". The signature is fluid and cursive, with the first letters of each name being capitalized and prominent.

R. N. Shulman, General Manager
Health, Safety, and Environment

GTY/krl

Attachments

Springborn Laboratories, Inc.

Environmental Sciences Division

790 Main Street • Wareham, Massachusetts 02571 • (508) 295-2550 • Telex 4436041 • Facsimile (508) 295-8107

22 October 1993

Diana C. L. Wong
Shell Development Company
Westhollow Research Center
3333 Highway 61x, South
Houston, Texas 77001

RE: Summary of Definitive Algal Test Results with Dobanol 91-8

Dear Diana:

Below is a summary of the results of the definitive test exposing *Selenastrum capricornutum* to Dobanol 91-8. During this test the algal growth medium contained 300 µg EDTA/L.

Nominal Conc. (mg/L)	Mean Cell Density (x 10 ⁶)			
	24	48	72	96 Hours
10	0.67	0.50	1.50	1.75
5.0	0.83	1.33	7.92	10.08
2.5	1.33	3.00	12.50	20.08
1.3	1.83	5.92	17.50	24.92
0.63	1.75	5.33	22.25	35.33
0.31	2.42	8.08	40.67	48.08
0.16	1.67	10.42	43.83	61.67
0.080	3.42	13.50	62.75	97.08
Control	3.25	19.75	64.83	100.83

The 96 hour EC50 (95% confidence limit) for cell density was calculated to be 0.28 (0.11 - 0.60) mg/L. The 96 hour NOEC was determined to be 0.080 mg/L. These results are based on nominal test concentrations.

 Springborn
LABORATORIES

This information has not been reviewed or approved by Springborn's Quality Assurance Unit and should be considered preliminary at this time. If you need any additional information, feel free to call me.

Sincerely,
SPRINGBORN LABORATORIES, INC.



James R. Hoberg
Study Director,
Aquatic and Terrestrial Plants

cc: C. Hardy
M. Machado
D. Surprenant
File: 777- 6106

 Springborn

**SPRINGBORN LABORATORIES, INC.
TELEFACS TRANSMISSION COVER SHEET**

DATE: 22 October 1993

TIME SENT: 1400

TO: (Name) Ms. Diana Wong

(Company) Shell Development Company

(Telefacs #) (713) 544-8727

FROM: Mark W. Machado

Springborn Laboratories, Inc.
790 Main Street
Wareham, Massachusetts 02571
Phone: (508) 295-2550
Telefacs: (508) 295-8107

NUMBER OF PAGES SENT (INCLUDING THIS COVER): three (3)

RE: Daphnid and Fathead Minnow Acute Toxicity Studies under Static Renewal Conditions with Dobanol 91-8.

Ms. Wong,

Attached please find two tables describing the biological results of the definitive exposures with Dobanol 91-8. The results suggest LC50's of 14 mg/L (i.e., daphnid) and 13 mg/L (i.e., fathead minnow) based on the nominal concentrations. In addition, the NOEC for the daphnid and fathead minnow exposures appear to be 5.0 mg/L and 5.1 mg/L, respectively. I plan to issue draft reports to you during the week of 11/22/93. if you have any questions or are in need of any additional information please do not hesitate to call.

Best Regards,

Mark W. Machado

cc: Collins, Hoberg, Sousa, Surprenant, Main File: 777-6104, 6105

Table 1. Summary of the Biological Results of the 48-hour Static Acute Exposure of Daphnids to Dobarol 91-8 Conducted 10/19/93 through 10/21/93.

Nominal Concentration (mg/L)	Biological Observations		
	0-hour (10/19/93)	24-hour ^b (10/20/93)	48-hour (10/21/93)
20	0 %	80 % ^c	100 %
10	0 %	0 % ^d	5 % ^{d,e}
5.0	0 %	0 %	0 %
2.5	0 %	0 %	0 %
1.3	0 %	0 %	0 %
Control	0 %	0 %	0 %

- a = 20 daphnids were exposed per concentration/control in four replicates. The results are presented as cumulative mortality (%).
- b = Solutions were renewed at this interval.
- c = All of the surviving daphnids were observed on the surface of the test solution and lethargic.
- d = Several of the surviving daphnids were observed to be lethargic.
- e = One of the surviving daphnids was observed to be on the surface of the test solution and lethargic.

Table 2 Summary of the Biological Results of the 96-Hour Static Acute Exposure of Fathead Minnow to Dobanol 91-8 Conducted 10/18/93 through 10/22/93.

Nominal Concentration (mg/L)	Biological Observations ^a				
	0-hour (10/18/93)	24-hour ^b (10/19/93)	48-hour ^b (10/20/93)	72-hour ^b (10/21/93)	96-hour (10/22/93)
20	0%	100%	100%	100%	100%
10	0%	10% ^c	10% ^c	10% ^c	10% ^c
5.1	0%	0%	0%	0%	0%
2.5	0%	0%	0%	0%	0%
1.3	0%	0%	0%	0%	0%
Control	0%	0%	0%	0%	0%

a = 20 fish were exposed per concentration/control in two replicates. The results are presented as cumulative mortality (%).
b = Solutions were renewed at this interval.
c = All surviving fish were described as suffering a complete loss of equilibrium.