HLR 415-85

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HASKELL LABORATORY REPORT NO. 415-85 [redacted]

Title of Report

STATIC ACUTE 96-HOUR LC50[1] OF [redacted]
TO THE FATHEAD MINNOW, Pimephales promelas

E. I. du Pont de Nemours and Company, Inc.
Haskell Laboratory for Toxicology and Industrial Medicine
P. O. Box 50, Elkton Road
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Date Issued: September 17, 1985

HLR 415-85

Title of Report

STATIC ACUTE 96-HOUR LC50 OF [redacted]
TO THE FATHEAD MINNOW, Pimephales promelas

Summary

[redacted] exhibited low acute toxicity to a warm freshwater fish, the fathead minnow, under static unaerated test conditions during a 96-hour exposure period. The 96-hour LC50 was 2341 mg/L, with a 95% confidence interval of 1766 mg/L to 2743 mg/L.

Report by: _____ 9/17/85
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JWW:RGS:CDL:zh:5.13
[redacted]
There are 7 pages in this report.

Haskell Laboratory Report 415-85 [redacted]

Material Tested

[redacted]

Haskell No.

15,866

Other Codes

[redacted]

CAS Registry Number

[redacted]

Synonyms

[redacted]

Composition

[redacted]

Sponsor

[redacted]
Polymer Products Department

Material Submitted by

[redacted]
Polymer Products Department
Washington Laboratory
Parkersburg, W. Va.

Test Facility

E. I. du Pont de Nemours & Company
Haskell Laboratory for Toxicology and Industrial Medicine
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Study Initiated/Completed

Initiated on 6/17/85 and completed on 7/12/85.

[redacted]

There are 7 pages in this report.

Distribution

[redacted]

Company Sanitized. Does not contain TSCA CBI

Introduction/Purpose

To determine the static acute toxicity of [redacted] (H-15,866) to a warm freshwater fish, the fathead minnow (Pimephales promelas).

Materials/Methods (Environmental Biology Section Aquatic SOP-T02)

The test material, [redacted] was received as an aqueous slurry containing [redacted] of the active ingredient, [redacted]. All nominal concentrations and the stock solution are based on the weight (density of slurry: 1.2 g/mL) of the aqueous slurry and were not corrected for the amount of active ingredient.

The test material, [redacted] was prepared as a 50 mg/mL stock solution in distilled deionized water. The pH of the stock solution was adjusted to 7.0 with 1N NaOH. Appropriate volumes of the stock were added to 5-liter all glass aquaria and diluted with laboratory well water to yield the desired nominal exposure concentrations in 4-liter final volumes. Two identical vessels containing only laboratory well water were designated as the H_2O controls.

Stability of the test and control materials in well water was not determined because it is not a critical factor in static acute aquatic tests.

Five juvenile, unsexed fathead minnows from Haskell Laboratory-bred stock with a 2.08 cm mean standard length (range 1.6 to 3.1 cm) and 0.156 g mean wet weight (range 0.023 to 0.440 g) were randomly placed in the test aquaria. The fish were maintained at Haskell Laboratory for 126 days before being used for this test. Haskell Laboratory-bred fathead minnows are identified by labeling the culture and test vessels. Fish were not fed for 48 hours prior to nor during the exposure. The test solutions were not aerated, and temperature was maintained between 21.1 and 22.0°C. Photoperiod was maintained at 16 hours light: 8 hours dark. Mortality counts and observations were made every 24 hours during the 96-hour exposure period.

Dissolved oxygen and pH were measured in the H_2O controls and in the low, medium, and high test concentrations at the beginning of the test and at 48-hour intervals during the 96-hour exposure period. Total alkalinity, hardness (EDTA), and conductivity were measured at the beginning of the test in the H_2O control. The 96-hour LC50 and confidence limits were calculated by probit analysis (Finney, 1971).

All records from this test and the final report will be maintained at Haskell Laboratory for Toxicology and Industrial Medicine or archived at the Du Pont Hall of Records.

Results

Test results for fathead minnows exposed to [redacted] (H-15,866) are presented in Table I. [redacted] exhibited low acute toxicity to fathead minnows under static unaerated test conditions during a 96-hour exposure period. The 96-hour LC50 was 2341 mg/L, with a 95% confidence interval of 1766 mg/L to 2743 mg/L.

The chemical and physical parameters measured during the test of H-15,866 are reported in Table II. All were within acceptable ranges for this study.

Discussion/Conclusion

[redacted] (H-15,866) has been tested for acute toxicity with the fathead minnow, a warm freshwater fish. Under the conditions of this test, [redacted] was found to exhibit low acute toxicity.

Footnotes

[1] LC50 = That concentration which is lethal to 50% of a test population during the specified time period.

References

Finney, D. J., (1971). Probit Analysis, 3rd. Ed., Cambridge University Press, 333 pp.

TABLE I

RESULTS OF A 96-HOUR STATIC ACUTE TOXICITY TEST WITH FATHEAD MINNOWS EXPOSED TO H-15,866. [redacted]

Nominal Test Concentrations (mg/L)	Observed Mortality (%)							
	24 Hr.		48 Hr.		72 Hr.		96 Hr.	
	A*	B*	A*	B*	A*	3*	A*	B*
6400	100	100	100	100	100	100	100	100
3200	100	100	100	100	100	100	100	100
1600	0	0	0	20	0	20	0	20
800	0	0	0	0	0	0	0	0
400	0	0	0	0	0	0	0	0
200	0	0	0	0	0	0	0	0
H_2O Control	0	0	0	0	0	0	0	0

*Replicate exposure chambers containing five fathead minnows each.

TABLE II

RESULTS OF PHYSICAL AND CHEMICAL PARAMETERS MEASURED DURING A 96-HOUR STATIC ACUTE TOXICITY TEST WITH FATHEAD MINNOWS EXPOSED TO H-15,866. [redacted]

Physical/Chemical Parameters	Nominal Test Concentrations 6400 (High)	800 (Medium)	20 (Low)	Controls H_2O
Dissolved Oxygen (mg/L)				
0 Hr.	8.4	8.4	8.3	8.3
48 Hr.	6.6*	6.7	6.8	7.5
96 Hr.	--	6.2	5.9	7.5
pH				
0 Hr.	6.9	7.3	7.3	7.4
48 Hr.	7.0*	7.3	7.3	7.3
96 Hr.	--	7.4	7.3	7.4
Total Alkalinity (mg/L as $CaCO_3$)				
0 Hr.	--	--	--	84
EDTA Hardness (mg/L as $CaCO_3$)				
0 Hr.	--	--	--	76
Conductivity (umhos/cm)				
0 Hr.	--	--	--	166

* Measured at 24 hours due to total mortality.