

US EPA ARCHIVE DOCUMENT

DATA EVALUATION RECORD  
ALGAE OR DIATOM EC<sub>50</sub> TEST  
GUIDELINE 122-2 OR 123-2 (TIER I OR II)

1. CHEMICAL: 2-chloro-4,6-bis(isopropylamino)-s-triazine PC Code No.: 080808

2. TEST MATERIAL: Propazine Purity: 98%

3. CITATION

Authors: S. L. Hicks; D. W. Gledhill  
Title: Acute toxicity of propazine to *Navicula pelliculosa*

Study Completion Date: 08/30/95

Laboratory: ABC Laboratories, Inc.

Sponsor: Griffin Corporation

Laboratory Report ID: ABC Laboratories # 41966

DP Barcode: D237791

MRID No.: 442873-10

4. REVIEWED BY: Thomas M. Steeger, Ph.D., Fishery Biologist, EFED, ERB IV, U.S. EPA

Signature: *Thomas M Steeger*

Date: 10/2/97

5. APPROVED BY: Nicholas E. Federoff, Wildlife Biologist, EFED, ERB IV, U.S. EPA

Signature: *N.E. Federoff*

Date: 10/8/97

6. STUDY PARAMETERS

Scientific Name of Test Organism: *Navicula pelliculosa*  
Definitive Test Duration: 120 hrs  
Type of Concentrations: Mean measured/Nominal

7. CONCLUSIONS: This study is scientifically sound and does fulfill the 123-2(A) guideline requirements for acute toxicity tests for algae. The 120-hr EC<sub>50</sub> value was estimated to be 24.8 µg/L. After 120 hours, the no-observed effect concentration was 6.5 µg/L based on the absence of growth-inhibition effect.

Results Synopsis

EC<sub>50</sub>: 0.0248 ppm ai                      95% C.I.: 0.0203 - 0.0293 ppm ai  
NOEL: 0.0065 ppm ai                      Slope: 1.53

8. ADEQUACY OF THE STUDY

A. Classification: Core

B. Rationale: Methodology is consistent with FIFRA recommendations; data were well presented.

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C. Repairability:

9. GUIDELINE DEVIATIONS

1.

2. (etc.)

10. SUBMISSION PURPOSE: To investigate the influence of propazine on growth and reproduction on the freshwater diatom (*Navicula pelliculosa*) to estimate the no-observed effect concentrations.

11. MATERIALS AND METHODS

A. Test Organisms

Guideline Criteria	Reported Information
<u>Species</u> <i>Skeletonema costatum</i> <i>Anabaena flos-aquae</i> <i>Selenastrum capricornutum</i> <i>Navicula pelliculosa</i>	<i>Navicula pelliculosa</i>
<u>Initial Number of Cells</u> 3,000 - 10,000 cells/ml	3,300 cells/ml
<u>Nutrients</u> Standard formula, e.g. 20XAAP	Macronutrient/micronutrient stock solution recipes

B. Test System

Guideline Criteria	Reported Information
<u>Solvent</u>	dimethylformamide (DMF)
<u>Temperature</u> Skeletonema: 20°C Others: 24-25°C	24 ± 2°C
<u>Light Intensity</u> Anabaena: 2.2 K lux (+15%) Others: 4.3 K lux (+15%)	4,310 ± 650 lux

Guideline Criteria	Reported Information
<u>Photoperiod</u> Skeletonema: 14 h light, 10 h dark or 16 h light, 8 h dark Others: Continuous	Continuous
<u>pH</u> Skeletonema: approx. 8.0 Others: approx. 7.5	Range: 7.5 - 8.9

## C. Test Design

Guideline Criteria	Reported Information
<u>Dose range</u> 2X or 3X progression	2X progression
<u>Doses</u> at least 5	control, vehicle control, 1.7, 3.3, 6.5, 13, 25, and 50 µg/L
<u>Controls</u> negative and/or solvent	control and solvent control
<u>Replicates per dose</u> 3 or more (4 or more for Navicula)	triplicate
<u>Duration of test</u> 120 hours	120 hours
Daily observations were made?	Initial cell counts only on control and vehicle control; afterward, cell counts at 24, 48, 72, 96, and 120 hrs.
<u>Method of Observations</u>	Cellular counts using hemacytometer and an Olympus Model BH-2 microscope
<u>Maximum Labeled Rate</u>	1.2 lb ai/acre

## 12. REPORTED RESULTS

Guideline Criteria	Reported Information
Quality assurance and GLP compliance statements were included in the report?	Yes
Initial and 120 h cell densities were measured?	Yes (initial measured only in control and vehicle control)
Control cell count at 120 hr $\geq 2X$ initial count?	Yes (258X)
Initial/chemical concentrations measured? (Optional)	Yes
Raw data included?	Yes

Dose Response

Dose (mg ai/L)	Cell Density ( $\times 10^4$ cells/ml)	% Inhibition	120-Hour pH
Control	85	--	8.5
Solvent Control	100	--	8.6
0.0017	100	17.65	8.8
0.0032	85	0.00	8.9
0.0065	86	1.18	8.9
0.013	64	-24.7	8.2
0.029	41	-51.76	8.0
0.057	22	-74.12	7.9

Other Significant Results:Statistical Results

Statistical Method: ANOVA (Proc GLM); multiple means comparison (Dunnett's)

EC<sub>50</sub>: 0.0248 ppm

95% C.I.: 0.0203 - 0.0293 ppm

Slope: 1.53

NOEC: 0.0065 ppm

13. Verification of Statistical Results

Statistical Method: TOXANAL

EC<sub>50</sub>: 0.024 ppm                      95% C.I.: 0.021-0.029 ppm

Slope: 1.96                              NOEC: 0.0065 ppm

Adjusted for active ingredient: Results expressed as mean measured concentrations.

EC<sub>50</sub>: 0.0248 ppm ai                      95% C.I.: 0.0203 - 0.0293 ppm ai

NOEC: 0.0065 ppm ai

14. REVIEWER'S COMMENTS:

Measured concentrations in Levels 3 through 6 were consistently higher than nominal levels (mean 109%); measured concentrations overall were 106 ± 8.7% of the nominal test concentrations.

Nutrient solution preparation described in text and may represent standard solutions.