

US EPA ARCHIVE DOCUMENT

DATA EVALUATION RECORD
ALGAE OR DIATOM EC₅₀ 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: D. W. Gledhill; J. B. Bussard
Title: Acute toxicity of propazine to
Skeletonema costatum

Study Completion Date: 5/22/95

Laboratory: ABC Laboratories, Inc.

Sponsor: Griffin Corporation

Laboratory Report ID: ABC Labs #41967

DP Barcode: D237791

MRID No.: 442873-11

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

Signature: *Thomas M Steeger*

Date: 10/2/98

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

Signature: *N. E. Federoff*

Date: 10/7/98

6. STUDY PARAMETERS

Scientific Name of Test Organism: *Skeletonema costatum*

Definitive Test Duration: 120 hours

Type of Concentrations: Mean measured/Nominal

7. CONCLUSIONS: This study is scientifically sound and does fulfill the 123-2 guideline requirements for acute toxicity tests for diatoms. The 120-hour EC₅₀ was estimated to be 25 µg a.i./L. After 120 hours, the no-observed effect concentration was 17 µg a.i./L based on the absence of a growth inhibition effect.

Results Synopsis

EC₅₀: 0.025 ppm ai

95% C.I.: 0.022-0.029 ppm ai

NOEL: 0.017 ppm ai

Slope: 3.20

8. ADEQUACY OF THE STUDY



2041126

A. Classification: Core

B. Rationale: Methodology was consistent with FIFRA guidelines. Data were verifiable.

C. Repairability:

9. GUIDELINE DEVIATIONS

1.

10. SUBMISSION PURPOSE:

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>Skeletonema costatum</i>
<u>Initial Number of Cells</u> 3,000 - 10,000 cells/ml	1.1×10^4 cells/ml
<u>Nutrients</u> Standard formula, e.g. 20XAAP	MAA nutrient media

B. Test System

Guideline Criteria	Reported Information
<u>Solvent</u>	dimethylformamide (DMF)
<u>Temperature</u> Skeletonema: 20°C Others: 24-25°C	$20 \pm 2^\circ\text{C}$
<u>Light Intensity</u> Anabaena: 2.2 K lux ($\pm 15\%$) Others: 4.3 K lux ($\pm 15\%$)	$4,310 \pm 650$ Lux
<u>Photoperiod</u> Skeletonema: 14 h light, 10 h dark or 16 h light, 8 h dark Others: Continuous	16 hr light, 8 hr dark

Guideline Criteria	Reported Information
<p><u>pH</u> Skeletonema: approx. 8.0 Others: approx. 7.5</p>	Range: 7.8 - 8.2

C. Test Design

Guideline Criteria	Reported Information
<u>Dose range</u> 2X or 3X progression	2X
<u>Doses</u> at least 5	control, solvent control, 2.5, 5.0, 10, 20, 40, and 80 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)	triplicates
<u>Duration of test</u> 120 hours	120 hours
Daily observations were made?	Yes
<u>Method of Observations</u>	hemacytometer/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 (in control and solvent control)
Control cell count at 120 hr ≥2X initial count?	Yes (54.5X)

Guideline Criteria	Reported Information
Initial chemical concentrations measured? (Optional)	Yes
Raw data included?	Yes

Dose Response

Dose (mg ai/L)	Cell Density (x 10 ⁴ cells/ml)	% Inhibition	120-Hour pH
Control	60	--	8.1
Solvent Control	42	--	7.8
2.2	53	11.67	8.1
5.3	53	11.67	8.2
8.9	50	16.67	8.0
17	41	-31.67	8.0
34	13	-78.33	8.0
67	7.6	-87.33	8.0

Other Significant Results:Statistical Results

Statistical Method: ANOVA (Proc GLM)/multiple means comparison (Dunnnett's); Proc NLIN used to estimate B and EC₅₀

EC₅₀: 0.025 ppm 95% C.I.: 0.022 - 0.029 ppm

Slope: 3.20 NOEC: 0.017 ppm

13. Verification of Statistical Results

Statistical Method: TOXANAL

EC₅₀: 0.028 ppm 95% C.I.: 0.025-0.033 ppm

Slope: 3.60 NOEC: 0.017 ppm

Adjusted for active ingredient:

EC₅₀: 0.025 ppm ai 95% C.I.: 0.022 - 0.029 ppm ai

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NOEC: 0.017 ppm ai

14. REVIEWER'S COMMENTS: