

US EPA ARCHIVE DOCUMENT

DATA EVALUATION RECORD

CHEMICAL: Bronopol (Myacide BT)

FORMULATION: 2 Bromo-2-Nitro-Propane-1,3 Diol18%

CITATION: Linden, E., Bengtsson, B., Svanberg, O. and G. Sundstrom. 1979. The acute toxicity of 78 chemicals and pesticide formulations against two brackish organisms, the Bleak and a Harpacticoid. Chemosphere 11/12 p. 843. Submitted by Boots Company Ltd. EPA Accession 247196.

REVIEWED BY: Elizabeth E. Zucker, Wildlife Biologist
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DATE REVIEWED: May 13, 1982

TEST TYPE: 96 hour aquatic LC₅₀ (marine/estuarine species)

A. Test Species: Alburnus alburnus and Nitocra spinipes

REPORTED RESULTS: The following 96 hour LC₅₀'s were found for two aquatic species exposed to a formulated product containing 18% Bronopol.

<u>Species</u>	<u>96-hr LC₅₀ (95% CL)</u>
<u>Alburnus Alburnus</u> (Fish)	39(36-42) mg/l
<u>Nitocra spinipes</u> (invertebrate)	10 (7-14) mg/l

REVIEWER'S CONCLUSION: These studies on the acute toxicity of formulated Bronopol to fish (A. alburnus) and aquatic invertebrates (N. spinipes) can not used to fulfill a guidelines requirement. This is mainly because the species are not of the type recommended under current guidelines. Also, much of the information needed for an evaluation was not provided in the test report (test concentrations, water characteristics and mortality data). Furthermore, some of the test conditions deviated from those recommended, including water temperature and salinity.

Materials/Methods

Fish (A. alburnus) were caught by seine net in the Baltic Sea in the vicinity of the testing laboratory and held for 2 weeks in storage tanks containing brackish water at 10°C.

Test specifics of note include:

Fish length: about 8 cm

Test vessels: 70 l glass aquaria containing 60 l of natural brackish water

Diluent characteristics: 7 0/00 salinity, 1.5 mequ/l alkalinity, and pH 7.8

Temperature: 10°C

10 fish/concentration

Fish were not fed during the test.

No aeration of water was used.

Mortality was recorded daily.

Adult invertebrates (N. spinipes) were taken from laboratory cultures and exposed to the toxicant in 15 ml test tubes containing filtered brackish water (same characteristics of water used for fish). The test water was kept at room temperature (about 21°C). Ten animals per concentration (in duplicate) were exposed. Mortality was recorded only after 96 hours.

Statistical Analysis

A graphical method (Litchfield and Wilcoxon) was used to analyze mortality data.

Discussion/Results

<u>Species</u>	<u>96 hour LC₅₀ (95% C.L.)</u>
<u>A. alburnus</u>	39 (36-42)
<u>N. spinipes</u>	10 (7-14)

Reviewer's Evaluation

A. Test Procedures

The following exceptions to current guidelines are noted.

1. The test species are not among those currently recommended.
2. The following information is not reported:
 - a. Test concentrations used.
 - b. Solvent used (if any)
 - c. Characteristics of the test water following application of toxicant, including, pH, D.O., alkalinity, and hardness
 - d. Weight of fish
 - e. Mortality data
3. The testing apparatus and water parameters (Salinity) of both tests were not of the type recommended under current guidelines.
4. The invertebrates tests were run on adults and not immature animals as recommended.
5. The water temperature was not controlled in the invertebrate test.
6. The invertebrate study was run for 96 hours and not the required 48 hours.

B. Statistical Analysis

None could be performed because the mortality and test concentration data were not provided.

C. Discussion/Results

These studies were part of a comprehensive publication from the open literature that described acute tests on 78 chemicals. Much of the specific information needed for a data evaluation was not provided. Of note, the tests were not run on recommended species, a formulated product was used, and mortality data were not reported.

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D. Conclusions

1. Category: Invalid
2. Rationale: The studies were part of a summary of tests run on a variety of chemicals. Much of the specific information needed for a data evaluation was not provided, including: test concentrations used, water characteristics, fish weights and mortality data. Also the species tested were not of the type currently recommended. The formulated product was used. Some of the test conditions varied from recommended guidelines including salinity, type of test vessels, and temperatures.
3. Repairability: Even if the information necessary for evaluation was provided, and found acceptable, these studies could only be classified as supplemental for the formulated product. This is mainly because the species are not of the type recommended and some of the testing conditions (temperature and salinity) varied substantially from guidelines.

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