

DATA EVALUATION RECORD

40129803
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1. Chemical: Maquat MQ 416M
2. Test Material: Alkyl (50% C₁₄, 40% C₁₂, 10% C₁₆)

dimethyl benzyl ammonium chloride	20%	069105
Octyl decyl dimethyl ammonium chloride	15%	069165
Diocetyl dimethyl ammonium chloride	7.5%	069166
Didecyl dimethyl ammonium chloride	7.5%	069149
Total	50.0%	A.I.
3. Study Type: 48-Hour LC₅₀
Species Tested: Daphnia pulex
4. Study ID: Surprenant, D.C. (1987) Acute Toxicity of Maquat MQ 416M to Daphnids (Daphnia pulex): Report No. BW-86-12-2265; Prepared by Springborn Bionomics, Inc. for Mason Chemical Company, Chicago, IL: Acc. Nos. 401298-01, -02, and -03.
5. Reviewed By: Curtis E. Laird
 Fishery Biologist
 EEB/HED
Signature:
Date:
6. Approved By: Norman J. Cook
 Head, Section II
 EEB/HED
Signature:
Date:
7. Conclusions:

This study indicates Maquat MQ 416M is very highly toxic to daphnids with an LC₅₀ of 0.052 ppm. This study does fulfill the requirement in support of registration for an aquatic invertebrate study.
8. Recommendations: N/A
9. Background:

This study was submitted in response to a previous EEB review.
10. Discussion of Individual Test: N/A



11. Materials and Methods:

- a. Test Animals - Test animals were Daphnia pulex from laboratory stock; Age = < 24 hours old.
- b. Test Design - Daphnids were tested in 250 mL glass vessels; temperature was 20 ± 1 °C; photoperiod was 16 L/8 D; pH was 7.3; and dissolved oxygen was 8.2 mg/L.
- c. Dose - Static bioassay using nominal concentrations; no solvent was used.
- d. Design - Twenty daphnids per dose level; five dose levels plus negative control (0, 0.019, 0.032, 0.054, 0.090, and 0.15 ppm).
- e. Statistics - Stephan's 1977.

12. Reported Results:

The study author found the 48-hour LC₅₀ to be 0.052 ppm. The no-observed-effect level was 0.032 ppm.

13. Study Author's Conclusions:

The 48-hour LC₅₀ was 0.052 ppm. The data contained in this report were audited by the Quality Assurance Unit to assure compliance with the protocols, Standard Operating Procedures, and the pertinent EPA Good Laboratory Practice Regulations. All discrepancies in this report were made known immediately to the study director and management.

14. Reviewer's Discussion and Interpretation of the Study:

- a. Test Procedures - The test procedures comply with the recommended EPA protocol of October 1982.
- b. Statistical Analysis - The statistics were verified with Stephan's computer program.
- c. Discussion/Results - Maquat MQ 416M is very highly toxic to daphnids with an LC₅₀ of 0.052ppm.
- d. Adequacy of Data
 - 1) Category - Core
 - 2) Rationale - N/A
 - 3) Repairability - N/A

15. Completion of One-Liner: Yes

16. CBI Appendix: N/A

Lab No: Regular M0 416 Oarbia rule: 11-05-A

CONC.	NUMBER EXAMINED	NUMBER DEAD	PERCENT DEAD	BINOMIAL PROB. (P=100)
0.00	10	10	100	9.536742E-05
0.00-0.05	10	0	0	100
0.05-0.10	10	11	55	41.15014
0.10	10	0	0	9.536742E-05
0.10	10	0	0	9.536742E-05

THE BINOMIAL TEST SHOWS THAT 0.032 AND 9.000001E-02 CAN BE USED AS STATISTICALLY SOUND CONSERVATIVE 95 PERCENT LOWER-BOUND LIMITS, BECAUSE THE ACTUAL CONFIDENCE LEVEL ASSOCIATED WITH THESE LIMITS IS GREATER THAN 95 PERCENT.

AN UPPER-BOUND OF 0.050 FOR THIS SET OF DATA IS 9.115227E-02

WHEN THERE ARE LESS THAN TWO CONCENTRATIONS AT WHICH THE PERCENT DEAD IS BETWEEN 0 AND 100, NEITHER THE MOVING AVERAGE NOR THE PROBIT METHOD CAN GIVE ANY STATISTICALLY SOUND RESULTS.
