DATA EVALUATION RECORD

1. **CHEMICAL:** Nuosept

2. **FORMULATION:** Nuosept - 95

3. **CITATION:** Bionomics, EG & G Inc. 1974. Acute toxicity of Nuosept - 95 to bluegill (Lepomis macrochirus) and rainbow trout (Salmo gairdneri). Submitted to Tenneco Chemicals, Piscataway, N.J. June 1974. Accession No. 247878.

4. **REVIEWED BY:** Mary L. Gessner
   Fishery Biologist
   HED/EEB

5. **DATE REVIEWED:** 8/12/82

6. **TEST TYPE:** 96-hour acute toxicity to freshwater fish
   Test species:

   Bluegill sunfish (Lepomis macrochirus)

7. **REPORTED RESULTS:** The reported 96-hour LC_{50} (and 95% confidence limits) of Nuosept-95 for bluegill sunfish is 163(135-197) ppm. The reported no-effect level is 87 ppm.

8. **REVIEWER'S CONCLUSIONS:**

   This study is scientifically sound, but is not adequate to fulfill the guideline requirement concerning acute toxicity of the technical material to warmwater fish. The study would, however, be adequate to fulfill a data requirement pertaining to the toxicity of this particular formulation, as testing was conducted on the formulated product. With an LC_{50} of 163 ppm, Nuosept-95 is practically non-toxic to warmwater fish.

Materials/Methods

Test Procedure

Bluegill were obtained from a commercial hatchery and held in the testing laboratory for at least 30 days prior to testing. Test fish had a mean weight of 1.2g and mean length of 41 mm. Test fish were not fed for 48 hours prior to initiation of testing. Mortality during holding was less than 2%. Testing was conducted in 5-gallon glass vessels kept in a water both at 20°C ($\pm$ 1.0). Ten fish per concentration were tested. Ten control fish were also tested. Test vessels were not aerated during the test. The test material was introduced into the test vessels in a solution of water. The reconstituted water was prepared by adding 48 mg of $NaHCO_3$, 30 mg of $MgSO_4$, 30 mg of $CaSO_4$ and 2 mg of KCl per liter of deionized water. The pH of the standard diluent was 7.1, and the methyl orange alkalinity was 35 ppm as $CaCO_3$. Dissolved oxygen concentrtions for the various test vessels ranged from 8.7 initially to 4.8 mg/l at the end of the test.

Statistical Analysis

The TL_{50} value and its 95% confidence intervals were reportedly calculated by converting the test concentrations and the corresponding observed percent mortalities to logs and probits, respectively. These values were then used to calculate a linear regression equation.

Discussion/Results

The following TL_{50}s and their 95% confidence intervals were reported:

24-hr TL_{50} - 366 (232-577) ppm
96-hr TL_{50} - 163 (135-197) ppm

The no-effect level was reported to be 87 ppm.

Reviewer's Evaluation

A. Test Procedure

Testing generally followed EPA-recommended protocols. Testing was conducted on the formulated product, not the active ingredients. Food was withheld for only 48 hours prior to testing, not the recommended 96 hours. Raw mortality data were not reported, only the percent of organisms dead at 24 and 96 hours.

B. Statistical Analysis

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GESSNER   NUOSEPT-95  LC50 BLUEGILL
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CONC.        NUMBER        NUMBER        PERCENT
             EXPOSEO       DEAD          DEAD
870          10            10            100
560          10            10            100
370          10            10            100
240          10            8             80
180          10            5             50
160          10            7             70
120          10            1             10
100          10            1             10
87           10            0             0
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THE BINOMIAL TEST SHOWS THAT 120 AND 370 CAN BE
USED AS STATISTICALLY SOUND CONSERVATIVE 95 PERCENT
CONFIOENCE LIMITS, BECAUSE THE ACTUAL CONFIOENCE LEVEL
ASSOCIATED WITH THESE LIMITS IS GREATER THAN 95 PERCENT.

AN APPROXIMATE LC50 FOR THIS SET OF OATA IS 146.2557

RESULTS CALCULATEO USING THE MOVING AVERAGE METHOD
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 SPAN         G             LC50          95 PERCENT CONFIDENCE LIMITS
- 8           0.08143742    176.3944      150.7768      208.4399
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RESULTS CALCULATEO USING THE PROBIT METHOD
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ITERATIDNS   G             H             GOODNESS OF FIT PROBABILITY
6            0.1581314     1             0.7838826
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SLOPE   =   6.812173
95 PERCENT CONFIDENCE LIMITS = 4.103262   AND   9.521084

LC50 =   165.4487
95'PERCENT CONFIDENCE LIMITS = 144.8033 AND 193.0576

LC10 =   107.7042
95 PERCENT CONFIOENCE LIMITS = 80.10198 ANO 125.8705
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C. Discussion/Results

The reported LC_{50} of 163 ppm is acceptable for this formulated product.

D. Conclusions

1. Category: Supplemental

2. Rationale: Testing was conducted on the formulated product.

3. Repairability: None