DATA EVALUATION RECORD

1. **Chemical:** ASANA: cyano (3-phenoxyphenyl)methyl-4-chloro-alpha-(methylethyl)benzeneacetate

2. **Test Material:** MO 70616 Technical 98.8% ai.

3. **Study Type:** 96-hour fish LC50

4. **Study ID:** Forbis, A.D.; Georgie, L.; Burgess, D. (1985) Acute Toxicity of MO 70616 Technical to Bluegill Sunfish (Lepomis macrochirus). Conducted by ABC Lab., Inc. for Shell, Modesto, California.

5. **Reviewed by:** Miachel Rexrode
   Fisheries Biologist
   EEB/HED

   Signature: *Miachel Rexrode*

   Date: 6/25/86

6. **Approved by:** Norman Cook
   Head, Section 4
   EEB/HED

   Signature: *Norman Cook*

   Date: 6.25.86

7. **Conclusions:**

   This study appears scientifically sound and will support registration. At an LC50 = .26 ug/L ASANA is very highly toxic to bluegill sunfish.

   NOID? _____ ? —

SJN

8. Materials and Methods:

a. **Test species:**

Bluegill sunfish (Lepomis macrochirus). Fish were obtained from Osage Catfisheries in Osage Beach, Missouri and had a mean weight of 0.19 ($\pm$ 0.06) g and a mean standard length of 25 ($\pm$ 2.7) mm.

b. **Test System:**

The static fish bioassay was conducted in 5-gallon glass vessels containing 15 liters of soft reconstituted water. Water parameters were as follows: total hardness of 40 to 45 mg/L as $CaCO_3$, a total alkalinity of 30 to 35 mg/L as $CaCO_3$, an initial pH of 7.2 to 7.6, dissolved oxygen of 8.7 mg/L, and temperature of 22 °C ($\pm$ 1.0).

c. **Dose:**

Static bioassay using nominal concentrations. Five test concentrations (0.56, 0.32, 0.18, 0.10, 0.056 ug/L), a negative control, and a solvent control were used. Ten fish per concentration.

d. **Statistics:**

Statistical analysis of the concentration vs. effect data was obtained by employing a computerized LC_{50} program developed by Stephan et al.

9. **Reported Results:**

The results of the 96-hour toxicity test are presented in table 1. The 24-, 48-, and 96-hour LC_{50} values for MO 70616 technical were > 0.32, 0.38, and 0.26 ug/L, respectively. A no-effect concentration was calculated at 0.056 ug/L.

Table 1. Concentrations Tested and Corresponding Observed Percent Mortalities for Bluegill Sunfish (Lepomis macrochirus) Exposed to MO 70616 Technical

Concentration	Mortality		
ug/L	24 hr	48 hr	96 hr
control	0	0	0
solvent control	0	0	0
.056	0	0	0
.10	0	0	10
.18	0	10	20
.32	0	30	50
.56	60	80	100

10. <u>Reviewer's Discussion and Interpretation of Study</u>:

    a.   <u>Test Procedure</u>: Testing followed guidelines.

    b.   <u>Statistical Analysis</u>: Probit analysis by EPA's "Toxanal" program yielded a 96-hr LC_{50}: .26 ug/L with a 95 percent confidence limit of .19 and .36 ug/L. Computerized printout is attached.

    c.   <u>Discussion/Results</u>: This study appears to be scientifically sound and will support registration. At .26 ug/L, ASANA appears to be very highly toxic to bluegill.

    d.   <u>Adequacy of Study</u>:

        1.   Classification: Core

ASANA   96-hr LC50 Bluegill
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CONC. ug/L	NUMBER EXPOSED	NUMBER DEAD	PERCENT DEAD	BINOMIAL PROB. (PERCENT)
.56	10	10	100	9.765625E-02
.32	10	5	50	62.30469
.18	10	2	20	5.46875
.1	10	1	10	1.074219
.056	10	0	0	9.765625E-02

THE BINOMIAL TEST SHOWS THAT .1 AND .56 CAN BE USED AS
STATISTICALLY SOUND CONSERVATIVE 95 PERCENT CONFIDENCE
LIMITS, BECAUSE THE ACTUAL CONFIDENCE LEVEL ASSOCIATED WITH
THESE LIMITS IS GREATER THAN 95 PERCENT.

AN APPROXIMATE LC50 FOR THIS SET OF DATA IS .3200001

RESULTS CALCULATED USING THE MOVING AVERAGE METHOD

SPAN	G	LC50	95 PERCENT CONFIDENCE LIMITS	
3	.1656531	.2636138	.201022	.3588232

RESULTS CALCULATED USING THE PROBIT METHOD

ITERATIONS	G	H	
GOODNESS OF FIT PROBABILITY			
4	.2275663	1	.4191938

SLOPE   =   4.152781
95 PERCENT CONFIDENCE LIMITS = 2.171742   AND   6.133819

LC50 =   .2635969
95 PERCENT CONFIDENCE LIMITS =   .1972563 AND .3616267

LC10 =   .130353
95 PERCENT CONFIDENCE LIMITS = 6.464831E-02 AND .1781974
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