DATA EVALUATION REPORT

ECOLOGICAL EFFECTS BRANCH

1. Chemical: Tilt CGA-64250

   Shaughnessy No: 122101

2. Formulation: 90% a.i. Technical

3. Study ID: de Morsier, A. 1982. Acute Toxicity of CGA-64250 to Catfish. Prepared by Ciba-Geigy Ltd. Data Acc. # 072209. Reference 11.

4. Study Type: 96-hour LC50 with Catfish (Ictalurus melas)

5. Review By: Daniel Rieder
   Wildlife Biologist
   EEB/HED

   Daniel Rieder
   Date: 11/17/84
   Review Time 3 Hrs.

6. Reported Conclusions:

Acute Toxicity of CGA-64250

LC50 (96 hr) graphically determined:	4.8 ppm*
LC0 (96 hr) graphically determined:	2.3 ppm
LC100(96 hr) graphically determined:	10.0 ppm
LC50 (96 hr) calculated	5.1 ppm
95% C.L.	4.0-6.5 ppm

* Nominal concentrations

7. Reviewer's Conclusions:

This study is scientifically sound and fulfills guideline requirements for a warmwater fish LC50. It shows technical Tilt to be moderately toxic to fish.

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Methods:

Test Material: CGA-64250 (90% a.i. Tilt); Test levels: 0.58, 1.8, 3.2, 5.8 and 10 ppm (nominal).

Test Organism: Ictalurus melas catfish; 10 per level, 5 per test container; wt 2.4 g (1.5-4.24) Ln 64 mm (55-79 mm); commercial source; Acclimated 72 hrs, 24 hr without food.

Test Conditions: Test containers, glass, 15 liters; Reference OECD guidelines; loading factor 0.53 g/1; Temperature 23 ± 2°C; Aeration of test containers; Concentrations measured; Solvent control (methanol) and untreated control.

Results:

Nominal Conc ppm	Measured Conc ppm	No Tested	Mortality 24 hrs	48 hrs	72 hrs	96 hrs
Control	-	10	0	0	0	0
Solvent Control	-	10	0	0	0	0
0.58	0.58	10	0	0	0	0
1.8	1.8	10	0	0	0	0
3.2	3.1	10	0	2	2	2
5.8	5.6	10	0	1	5	5
10	9.5	10	10	10	10	10

96-hr LC50 = 5.1 ppm (nominal)
95% C.L. 4 - 6.5 ppm

Statistics:

The LC50 values were calculated according to Spearman-Kaerber 524-530 in D. J. Finney, London (1964).

Reviewer's Evaluation:

This study fulfills guideline requirements for a fish LC50. The test species, catfish, is not normally used but it is acceptable. The test containers were aerated but the concentrations were measured negating this problem. Note that the aeration apparently did not reduce the concentration levels substantially.

Conclusion:

Category: Core

122101 DATA ACC NO: 072209 REF 11 : TILT CATFISH LC50

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CONC.	NUMBER EXPOSED	NUMBER DEAD	PERCENT DEAD	BINOMIAL PROB.(PERCENT)
9.5	10	10	100	.0976563
5.6	10	5	50	62.3047
3.1	10	2	20	5.46875
1.8	10	0	0	.0976563
.58	10	0	0	.0976563

THE BINOMIAL TEST SHOWS THAT 1.8 AND 9.5 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 5.6

RESULTS CALCULATED USING THE MOVING AVERAGE METHOD

SPAN	G	LC50	95 PERCENT CONFIDENCE LIMITS	
3	.111817	4.70935	3.81438	5.99695

RESULTS CALCULATED USING THE PROBIT METHOD

ITERATIONS	G	H	GOODNESS OF FIT PROBABILITY
6	.2561	1	.616876

SLOPE = 5.72316
95 PERCENT CONFIDENCE LIMITS = 2.82688 AND 8.61945

LC50 = 4.8763
95 PERCENT CONFIDENCE LIMITS = 3.77622 AND 6.29782

LC10 = 2.9254
95 PERCENT CONFIDENCE LIMITS = 1.59391 AND 3.77733

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