

US EPA ARCHIVE DOCUMENT

DATA EVALUATION REPORT
 ECOLOGICAL EFFECTS BRANCH



1. Chemical: Tilt
Shaughnessy No: 12210
2. Formulation: 90% a.i.
3. Study ID: Kurmann, F. and Mendezu, C. 1982. Acute Toxicity of CGA-64250 to Carp. Prepared by Ciba-Geigy Ltd. Data Acc. No. 072209. Reference 10.
4. Study Type: 96-hour LC50 with Carp.
5. Review By: Daniel Rieder
 Wildlife Biologist
 EEB/HED
Daniel Rieder
 Date: 11/17/84
 Review Time 3 Hrs.
6. Reported Conclusions:
 96-hr LC50 = 6.8 ppm nominal concentration
 95% C.L. 5.5 - 9.4 ppm
 Reviewer Calculation based on measured 100% a.i. concentrations
 96-hr LC50 = 5.7 ppm (binomial)
 95% C.L. from 0 to 8.1 ppm
7. Reviewer's Conclusions: This study is scientifically sound but does not fulfill guideline requirements for a fish LC50 because carp is not an appropriate species. The results show that under the conditions of the test, CGA-64250 is moderately toxic to warmwater fish.

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8. Methods:

Test Organism: Carp (Cyprinus carpio); ten per level, 5 per test container; length 48 mm (41-56 mm) weight 1.24 g (0.77 to 2.04 g); Acclimation 16 days. 24 hrs no food;

Test Material: CGA-64250, 90%; test levels were 1, 1.8, 3.2, 5.8 and 10 mg/l nominal

Test Conditions: Test containers of glass with 15 liters; control and solvent control (0.6 ppm methanol); Test temp. 23° + 2°C; Lighting 16 hrs per day; Test containers aerated; Test levels measured.

9. Results:

<u>Measured Conc. ppm</u>	<u>No. Tested</u>	<u>Mortality</u>
8.1	10	10
4.6	10	1
2.7	10	0
1.5	10	1
0.82	10	2
Control	10	1
Vehicle cont.	10	1

96 hour LC50 = 6.8 ppm nominal concentrations
95% C.L. 5.5-9.4 ppm

10. Statistics: The reported LC50 value was determined according to J. Berkson, JASA 48 (1953), 569-599.

11. Reviewer's Evaluation:

The study is scientifically sound but does not fulfill guideline requirements. It shows that CGA-64250 (tech. Tilt) is moderately toxic to carp.

12. Conclusions:

Category: Supplemental

Rationale: The test species, carp, is not appropriate.

Repairability: Not repairable.

NOTE: THERE WAS CONTROL MORTALITY, BUT AT LEAST ONE OF THE LOWER CONCENTRATIONS HAD ZERO MORTALITY. THEREFORE, ABBOTT'S CORRECTION IS NOT APPLICABLE.

122101 DATA ACC NO: 072209 REF 10 : TILT CARP LC50

CONC.	NUMBER EXPOSED	NUMBER DEAD	PERCENT DEAD	BINOMIAL PROB.(PERCENT)
8.1	10	10	100	.0976563
4.6	10	1	10	1.07422
2.7	10	0	0	.0976563
1.5	10	1	10	1.07422
.82	10	2	20	5.46875

THE BINOMIAL TEST SHOWS THAT 0 AND 8.1 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 5.75052

THE MOVING AVERAGE METHOD CANNOT BE USED WITH THIS DATA SET BECAUSE NO SPAN WHICH PRODUCES MOVING AVERAGE ANGLES THAT BRACKET 45 DEGREES ALSO USES TWO PERCENT DEAD BETWEEN 0 AND 100 PERCENT.

RESULTS CALCULATED USING THE PROBIT METHOD

ITERATIONS	G	H	GOODNESS OF FIT PROBABILITY
6	7.15146	6.67185	0

A PROBABILITY OF 0 MEANS THAT IT IS LESS THAN 0.001.

SINCE THE PROBABILITY IS LESS THAN 0.05, RESULTS CALCULATED USING THE PROBIT METHOD PROBABLY SHOULD NOT BE USED.

SLOPE = 2.04402
 95 PERCENT CONFIDENCE LIMITS = -3.42215 AND 7.5102

LC50 = 5.76463
 95 PERCENT CONFIDENCE LIMITS = 0 AND +INFINITY

LC10 = 1.37863
 95 PERCENT CONFIDENCE LIMITS = 0 AND +INFINITY
