

US EPA ARCHIVE DOCUMENT

DATA EVALUATION REPORT  
ECOLOGICAL EFFECTS BRANCH

1. Chemical: Tilt

Shaughnessey Number: 122101

2. Formulation: Technical CGA-64250 90% a.i.

3. Study ID: Hitz, H.R. 1981. The Acute Toxicity of CGA-64250 to Daphnia magna straus. Prepared by Ciba Geigy LTD. Data Accession No. 072209  
Reference 12

4. Study Type: 48-hour LC50, Daphnia magna

5. Review By: Daniel Rieder  
Wildlife Biologist  
Ecological Effects Branch

Daniel Rieder  
Date: 9/11/84  
Review Time: 3 Hrs

6. Results:

Reported

48-hour LC<sub>50</sub>=11.5 ppm  
95% Confidence Limits=  
Slope=  
No Observed Effect Level=<3.7 ppm

Reviewer

11.3 ppm  
9.9 to 13 ppm  
3.8  
< 3.7 ppm

7. Reviewers Conclusions:

This study is scientifically sound and fulfills guideline requirements for an aquatic invertebrate LC50. The results show that technical Tilt is slightly toxic to daphnids.

00132931



2007473

8. Methods/materials

Test Material: Tilt (technical)

Percent active ingredient: 90%

Test Organism: Water flea

Species: Daphnia magna straus

Age/Stage: 12 +/-12 hours

Acclimation: fed with 5 ml green algae suspension

Number per concentration: 20

Test Containers: glass beakers

Size: 250 ml

Replicates: 4

Organisms per container: 5

Test Conditions: US EPA-660/3-75-009 April 1975

Photoperiod: 16 hours per day

Temperature: 20°C +/-0.5°C

Controls: untreated

9. Results:

48-hour  $LC_{50}$ =11.5 ppm Reported Reviewer  
95% Confidence Limits=graphically det.  
Slope=  
No Observed Effect Level=<3.7 ppm

<u>CONCENTRATION PPM</u>	<u>MORTALITY</u>
<u>Nominal/Measured</u>	<u>48HRS</u>
control	0
3.7	1
4.8	3
6.2	1
8.0	5
10	10
13	11
17	14
22	17
29	20

DO=8.85 mg/l at end of test, pH=8.6 and 8.7 at lowest and highest test levels/

10. Statistical Analysis:

Reported: graphically determined

Reviewer:

11. Reviewer Evaluation: The study fulfills guideline requirements for an aquatic invertebrate  $LC_{50}$ . The results show that Tilt is slightly toxic to daphnids.

12. Conclusions:

Category: Core

2

122101 DATA ACC NO: 072209 REF 12 TILT : AQU. INV. LC50

\*\*\*\*\*

CONC.	NUMBER EXPOSED	NUMBER DEAD	PERCENT DEAD	BINOMIAL PROB.(PERCENT)
29	20	20	100	9.53674E-05
22	20	17	85	.128841
17	20	14	70	5.76592
13	20	11	55	41.1901
10	20	10	50	58.8098
8	20	5	25	2.06947
6.2	20	1	5	2.00272E-03
4.8	20	3	15	.128841
3.7	20	1	5	2.00272E-03

THE BINOMIAL TEST SHOWS THAT 8 AND 22 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 10

RESULTS CALCULATED USING THE MOVING AVERAGE METHOD

SPAN	G	LC50	95 PERCENT CONFIDENCE LIMITS	
7	.115604	11.6817	10.0765	13.6589

RESULTS CALCULATED USING THE PROBIT METHOD

ITERATIONS	G	H	GOODNESS OF FIT PROBABILITY
4	.0603971	1	.558965

SLOPE = 3.82913  
 95 PERCENT CONFIDENCE LIMITS = 2.88809 AND 4.77017

LC50 = 11.2894  
 95 PERCENT CONFIDENCE LIMITS = 9.8596 AND 12.9956

LC10 = 5.26019  
 95 PERCENT CONFIDENCE LIMITS = 3.97494 AND 6.34379

\*\*\*\*\*