

US EPA ARCHIVE DOCUMENT

5-4-87

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TDMS DATA EVALUATION RECORD

PAGE 1 OF

CASE GS \_\_\_\_\_

PM \_\_\_\_/\_\_\_\_/\_\_\_\_

CHEM Diazinon

BRANCH EEB DISC \_\_\_\_\_

FORMULATION Knox Out 2FM (23% ai Microencapsulated)

~~This is the micro facts # - do not use in one-line use ACC# 240993~~  
FICHE/MASTER ID ROODI009

CITATION: Calmbacher, C.W. (1978b) The acute Toxicity of Knox-Out 2FM to the Bluegill Sunfish, Lepomis macrochirus Rafinesque, UCES Project No. 11506-4107; Prepared by Union Carbide Environ. Serv.; Submitted by Pennwalt Corp. (Accession No. 240993)

SUBST. CLASS=

OTHER SUBJECT DESCRIPTORS  
PRIM:

DIRECT REVIEW TIME= 1 hour (MH) START DATE May 1986 END DATE May 1986

REVIEWED BY: Margaret Rostker  
TITLE: ~~for~~ Wildlife Biologist  
ORG: EEB  
LOC./TEL: 557-7600

*H. T. Craven*

SIGNATURE:

APPROVED BY: Harry Craven  
TITLE: Supervisory Biologist  
ORG: EEB  
LOC./TEL: 557-7600

SIGNATURE: *Harry Craven*

*5/4/87*

This is a core study for a formulated product tested for acute toxicity to a warmwater fish. The Bluegill Sunfish LC50 = 0.512 ppm ai.

72-1

1/4

DATA EVALUATION RECORD

1. Chemical: Diazinon
2. Formulation: Knox Out 2FM (23% Microencapsulated)
3. Citation: Calmbacher, C.W. (1978b) The Acute Toxicity of Knox Out 2FM to the Bluegill Sunfish, Lepomis macrochirus Rafinesque, UCES Project No. 11506-4107; Prepared by Union Carbide Environ. Serv.; Submitted by Pennwalt Corp. (Accession No. 240993).
4. Reviewed by: John S. Leitzke  
Ecologist, Section 3  
EEB/HED
5. Date Reviewed: September 11, 1980
6. Test Type: Fish Acute LC<sub>50</sub>  
Test Species: Bluegill (Lepomis macrochirus)
7. Reported Results:  
96-hour LC<sub>50</sub> = 28.6 (21.8 to 37.4) ppm total test material (23% diazinon).
8. Reviewer's Conclusions:  
The 96-hour LC<sub>50</sub> equals .512 (.392 to .672) nominal ppm active ingredient (ai), indicating a moderate toxicity to warmwater fish. The test is scientifically sound. However, it is unacceptable in meeting the Guidelines minimum requirement for an acute LC<sub>50</sub> on warmwater fish using the formulation, Knox Out 2FM, and will be reconsidered upon receipt of actual measured concentrations for all test levels.

9. Materials and Methods:

The test material is the formulated product Knox Out 2FM (23% diazinon) since this test using the formulation is required for registration.

Bluegill fingerlings (avg wt 0.79 g; avg l. 39 mm) were assigned 10 to a group in standard, reconstituted water at 22 °C. The loading was 0.47 g/L. Spacing of doses was at 75 to 80 percent increments.

- a. Statistical Analysis: The reported dose-response data were analyzed on EEB's TI-59 calculator using the Finney Probit Program (attached).
- b. Discussion/Results: There was no control mortality. No major effect on pH was noted, and DO levels were within acceptable levels. Major symptoms observed were irritation and darkening.

10. Reviewer's Evaluation:

- a. Test Procedures: The test procedure generally complies with recommended protocols. The spacing of dose at 75 to 80 percent increments is greater than recommended, but enough partial mortalities occurred to adequately determine an LC<sub>50</sub>. Test levels were in terms of nominal concentrations and not measured.
- b. Statistical Analysis: There were enough partial mortalities to adequately calculate and LC<sub>50</sub>, and the Chisquare statistic indicated a homogeneous dose-response relationship within the test groups.
- c. Discussion/Results: The nominal, recalculated 48- and 96-hour LC<sub>50</sub>'s are 56.3 (44.9 to 70.7) and 28.0 (21.4 to 36.6) ppm total test material, respectively.
- d. Validation:
  1. Supplemental.
  2. Core.
  3. Reconsideration upon receipt of actual measured concentrations for all test levels.

Diazinon - Knox Out  
Blg1 - 48-hour LC50

Diazinon - Knox Out  
Blg1 - 96-hour LC50

UCES 18  
 .78 0.  
 10.  
 32.  
 1.  
 10.  
 56.  
 5.  
 10.  
 100.  
 9.  
 10.  
 180.  
 10.  
 10.

UCES 18.  
 78 2.  
 10.  
 32.  
 6.  
 10.  
 56.  
 9.  
 10.  
 100.  
 10.  
 10.

4.507 M  
 -1.523 YINT  
 1.667 LW M  
 0.087 CHI<sup>2</sup>

5.426  
 -4.498  
 ds=3 1.529  
 0.095

M  
 YINT  
 LW M  
 CHI<sup>2</sup>

28.007 LD50  
 21.434 LOCL  
 36.596 UPCL

NS

56.313  
 44.868  
 70.679

LD50  
 LOCL  
 UPCL

14.548 LD10  
 8.862 LOCL  
 23.910 UPCL

32.683  
 23.089  
 46.264

LD10  
 LOCL  
 UPCL

53.916 LD90  
 36.047 LOCL  
 80.642 UPCL

97.027  
 68.226  
 137.987

LD90  
 LOCL  
 UPCL