5-4-87

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 fiche # - do not use in one-liner use ACC# 240993

FICHE/MASTER ID R00DI009

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: Wildlife Biologist H. T. Craven
ORG: EEB
LOC./TEL: 557-7600

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 LC_{50} = 0.512 ppm ai.

72-1

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_{50}

Test Species: Bluegill (Lepomis macrochirus)

7. Reported Results:

96-hour LC_{50} = 28.6 (21.8 to 37.4) ppm total test material (23% diazinon).

8. Reviewer's Conclusions:

The 96-hour LC_{50} 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_{50} 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_{50}. Test levels were in terms of nominal concentrations and not measured.

b. Statistical Analysis: There were enough partial mortalities to adequately calculate and LC_{50}, 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_{50}'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.

3

Diazinon - Knox Out
Bigl - 48-hour LC_{50}

UCES 78

18
0.
10.

32.
1.
10.

56.
5.
10.

100.
9.
10.

180.
10.
10.

5.426 M
-4.498 YINT
ds=3 1.529 LW M
0.095 CHI^2
NS

56.313 LD_{50}
44.868 LOCL
70.679 UPCL

32.683 LD_{10}
23.089 LOCL
46.264 UPCL

97.027 LD_{90}
68.226 LOCL
137.987 UPCL

Diazinon - Knox Out
Bigl - 96-hour LC_{50}

UCES 78

18.
2.
10.

32.
6.
10.

56.
9.
10.

100.
10.
10.

4.507 M
-1.523 YINT
1.667 LW M
0.087 CHI^2

28.007 LD_{50}
21.434 LOCL
36.596 UPCL

14.548 LD_{10}
8.862 LOCL
23.910 UPCL

53.916 LD_{90}
36.047 LOCL
80.642 UPCL