

US EPA ARCHIVE DOCUMENT

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

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

CHEM 105001TERBUFOSBRANCH EEB

DISC \_\_\_\_\_

FORMULATION 15% GranularFICHE/MASTER ID FE0TER05

CITATION: USEPA. 1975. Report on the toxicity of Counter 15G to rainbow trout.  
 (USEPA, CBIB, Beltsville, Md., Static jar test #909, 12/12/75, unpublished report)

SUBST. CLASS=

OTHER SUBJECT DESCRIPTORS  
PRIM:

DIRECT REVIEW TIME= 4 hrs. (MH) START DATE 10/4/82 END DATE 10/27/82

REVIEWED BY: James D. Felkel  
 TITLE: Wildlife Biologist  
 ORG: Ecological Effects Branch, Hazard Evaluation Division (TS-769)  
 LOC./TEL: Crystal Mall #2, Room 1112, 703-557-3113

SIGNATURE:

DATE:

*James D. Felkel* 12/8/82

APPROVED BY:

TITLE:

ORG:

LOC/TEL:

SIGNATURE:

DATE:

DATA EVALUATION RECORD

1. Chemical: Terbufos (Shaughnessy No. 105001)
2. Formulation: 15% granular
3. Citation: USEPA 1975. Report on the toxicity of Counter 15G to rainbow trout. (USEPA, CBIB, Beltsville, Md. Static jar test #909, 12/12/75, unpublished report). MRID No. FEOTER05.
4. Reviewed By: James D. Felkel, Wildlife Biologist  
Ecological Effects Branch  
Hazard Evaluation Division (TS-769)
5. Date Reviewed: October 27, 1982
6. Test Type: Coldwater fish LC<sub>50</sub>
  - A. Test Species: Rainbow trout (Salmo gairdneri)
7. Reported Results: The 96-hour LC<sub>50</sub> is 68 ppb (95% C.L. of 50.19-92.14 ppb).
8. Reviewer's Conclusions:

This study is scientifically sound and with an LC<sub>50</sub> of 59.7 (48.1-74.3) ppb indicates that Counter 15G is very highly toxic to rainbow trout. This study, if needed, meets the intent of proposed guidelines (7/10/78) for this formulation.

2

METHOD

Method TSD 1.206 is cited. Acetone was the diluent. Fish were from the Wytheville National Fish Hatchery and had an average weight of 0.5 g. Concentrations of 21-280 ppb, based on total formulation, were tested.

RESULTS

LC<sub>50</sub> (with 95% C.L.)

|        |                          |
|--------|--------------------------|
| 24 hr. | 115 (84.55 - 156.41) ppb |
| 48 hr. | 76 (59.41 - 97.44) ppb   |
| 96 hr. | 68 (50.19 - 92.14) ppb   |

REVIEWER'S ANALYSIS

Methods used are generally consistent with proposed guidelines (7/10/78). EPA computer analysis (attached) indicates a 96-hour LC<sub>50</sub> of 59.7(48.1-74.3) ppb (probit method). Counter 15G is thus considered very highly toxic to the rainbow trout.

CONCLUSIONS

1. Category: Core, for this formulation
2. Rationale: Study meets the intent of proposed guidelines for this formulation
3. Repairability: N/A

EDDOTT'S CORRECTION CANNOT BE USED WITH THIS DATA SET.

WIKEL TERBUFOS RAINBOW TROUT LC50 156

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| DOC. | NUMBER EXPOSED | NUMBER DEAD | PERCENT DEAD | BINOMIAL PROB.(PERCENT) |
|------|----------------|-------------|--------------|-------------------------|
| 230  | 10             | 10          | 100          | 0.09765625              |
| 180  | 10             | 10          | 100          | 0.09765625              |
| 120  | 10             | 10          | 100          | 0.09765625              |
| 75   | 10             | 7           | 70           | 17.1875                 |
| 49   | 10             | 1           | 10           | 1.074219                |
| 32   | 10             | 2           | 20           | 5.46875                 |
| 21   | 10             | 0           | 0            | 0.09765625              |

THE BINOMIAL TEST SHOWS THAT 21 AND 120 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 65.66659

RESULTS CALCULATED USING THE MOVING AVERAGE METHOD

| SPAN | G          | LC50     | 95 PERCENT CONFIDENCE LIMITS |          |
|------|------------|----------|------------------------------|----------|
| 5    | 0.08969355 | 59.09649 | 47.295                       | 73.32025 |

RESULTS CALCULATED USING THE PROBIT METHOD

| ITERATIONS | G        | H | GOODNESS OF FIT PROBABILITY |
|------------|----------|---|-----------------------------|
| 10         | 0.183792 | 1 | 0.3486655                   |

SLOPE = 5.524502  
 95 PERCENT CONFIDENCE LIMITS = 3.156094 AND 7.892909

LC50 = 59.67161  
 95 PERCENT CONFIDENCE LIMITS = 48.09107 AND 74.30374

LC10 = 35.14656  
 95 PERCENT CONFIDENCE LIMITS = 22.02904 AND 44.33835

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