110201

6-27-80

Data Evaluation Record

1. Chemical: Rydex (USB 3153)

2. Formulation: Technical

3. Citation: Industrial Bio-Test Laboratories, Inc. (621-6022)

4. Reviewed by: Wayne C. Faatz, Ph.D
Hazard Evaluation Division

5. Date Reviewed: 27 June 1980

6. Test Type: Fish Acute LC_{50}
Species: Rainbow Trout
Bluegill Sunfish
Channel Catfish

7. Reported Results:

Test Material: U.S. Borax 3153 Technical

Species	Four-day TL_{50}	Four-day TL	Four-day TLgg
Rainbow Trout	47.3 ppm	484 ppm	4.62 ppm
Bluegill Sunfish	3.18 ppm	27.8 ppm	0.362 ppm
Channel Catfish	>100 ppm	>100 ppm	$\geq$100 ppm

Reference Pesticide: p,p-DDT

Species	Four-day TL_{50}	Four-day TL_1	Four-day TLgg
Rainbow Trout	0.030 ppm	0.064 ppm	0.014 ppm
Bluegill Sunfish	0.010 ppm	0.027 ppm	0.004 ppm
Channel Catfish	0.068 ppm	0.132 ppm	0.035 ppm

8. Reviewer's Conclusion: This study is unacceptable. The fish tanks were lined with polyethylene. This material is known to absorb some chemicals. It is not known if the pesticide was absorbed by the liner. The size of the fish were stated to be 35 to 75 mm in length. Fish 75 mm in length will probably exceed the maximum 5-gram limit on test fish.

Conclusions

1. Category: Invalid

2. Rationale:

   a. The use of polyethylene liners that could absorb the toxicant.

   b. The fish probably exceed the recommended weight.

3. Repairability: None

Wayne C. Faatz, Ph. D.
Wildlife Biologist
Ecological Effects Branch

Wayne C. Faatz, Ph.D. 7/15/80

Dave Coppage
Section Head #3
Ecological Effects Branch

Clayton Bushong
Branch Chief
Ecological Effects Branch

110201

Data Evaluation Record

1. Chemical: Rydex (USB 3153)

2. Formulation: Technical 99.6% pure

3. Citation: Bio-Test Laboratories, Inc.

4. Reviewed by: Wayne C. Faatz, Ph.D
Wildlife Biologist

6. Test Type: Avian Acute Oral LD_{50}

Test Species: Bobwhite Quail
Mallard Duck

7. Reported Results: In both species the LD_{50} was greater than 10,000 mg/kg. body weight.

8. Reviewer's Conclusions: These studies are scientifically sound and support the requirement for an avian acute oral LD_{50} test. With the quail, the LC_{50} could be less than 10,000 mg/kg because of slight regurgitation of the test material. However, the product is practically non-toxic to birds and should not affect the overall test results.

Materials and Methods: The technical grade material, 99.6% pure, was used. It was administered to the animals via gelatin capsules. With the quail slight regurgitation was noted. All calculations pertaining to dosage were based on the test material being 100% pure. This discrepancy has no effect on the results of the tests.

Only one test group of each species was used because of the low toxicity of the chemical. These groups were comprised of 10 animals, all young adults, five males and five females. The animals were fasted before the test, but food and water were available during the test period. A control group was used.

The test animals were weighed individually at test day 0 and 21 and by groups on test days 3, 7, and 14. The animals were sacrificed at day 21 with a gross necropsy performed. There are no supportive data that this was done with the quail.

Statistical Analysis: None was used since no mortality resulted.

Discussion/Results: In both the mallard duck and bobwhite quail, the LD_{50} exceeded 10,000 mg/kg. body weight. There was no apparent loss of body weight or reduced food consumption.

Reviewer's Evaluation:

A. Test Procedure: The test procedure followed those described in the EPA guidelines.

B. Statistical Analysis: None was performed or needed.

C. Discussion/Results: The findings were consistent with the data presented.

D. Conclusions:

1. Category: Core
2. Rationale: N/A
3. Repairability: N/A

Wayne C. Faatz, Ph. D.
Wildlife Biologist
Ecological Effects Branch

Wayne C Faatz Ph.D. 18 July 80

Dave Coppage 7/18/80

Dave Coppage
Section Head #3
Ecological Effects Branch

110201

DATA EVALUATION RECORD

1. Chemical: Prodiamine

2. Formulation: Treated soil with .76 parts of ^{14}C-ring-labeled compound to 3153 per million parts of soil.

3. Citation

Report No. TA-79-34
Audit and Certification of Industrial - Audit and Certification of Industrial - Bio-Test Laboratories, Inc.
Report No. 632-05945 completed in May 1976.
"Bioaccumulation Study with ^{14}C-Labeled compound 3153 in Channel Catfish."

Rydex®
Prodiamine
Pesticide Petition No. 9F2236
EPA File Symbol 1624-RRU

Acc. No. 099078
Shau. No. 110201

4. Reviewed by: Wayne C. Faatz, Ph.D.

5. Date Reviewed: 10 Feb. 1982

6. Test type: Bioaccumulation Study

Species: Channel Catfish

7. Reported Results: The radio-assays of fish tissues revealed concentrations of approximatley 0.12 ppm in muscle, 0.8 ppm in carcasses and 0.94 ppm in the viscera during the last 3 weeks of exposure.

During the 11 day recovery period residues in muscle, carcass and viscera decreased to 0.31, 0.101 and 0.395 ppm. respectively.

8. Reviewers Conclusions.

This report is totally unacceptable for use in making a hazard assessment.

The basic study design and execution were extremely poor. The number of fish used were too few to achieve any reasonable value of bioaccumulation and elimination halflife. The radioactivity measurements did not discern metabolites from parent compound.

S

A major problem exists with the test animals. Being kept in a static situation no doubt produces stress just from oxygen depletion and toxic effects of accumulated excreta. Even if the accumulation data were reliable, it would be suspect because the test were performed on stressed fish.

Conclusions

1. Category: Invalid

2. Rationale: Poor test protocols

3. Repairability: None

Data Evaluation Record

1. Chemical: Rydex (USB 3153)

2. Formulation: Technical Grade 98.8%

3. Citation: Industrial Bio-Test Laboratories, Inc. (8560-10490)

4. Reviewed by: Wayne C. Faatz, Ph.D
Wildlife Biologist

5. Date Reviewed: 30 June 1980

6. Test Type: Invertebrate LC_{50}
Species: Daphnia magna

7. Reported Results:

48 hour TL_{50} = 5.4 ppm
48 hour TL_{1} = 79.7 ppm
48 hour TL_{99} = 0.4 ppm

8. Reviewer's Conclusions: This study is unacceptable. In the 3.2, 5.6 and 10.0 ppm concentrations, test material was observed on thee surface of the water and on the bottom of thee bioassay vessels. The actual dose concentrations cannot be as reported.

D. Conclusions:

1. Category: Invalid

2. Rationale: The test doses were not completely dissolved, so the actual dosage is unknown.

3. Repairability: None

Wayne C. Faatz, Ph. D.
Wildlife Biologist
Ecological Effects Branch

Wayne C Faatz, Ph.D 7/15/80

Dave Coppage
Section Head #3
Ecological Effects Branch

Clayton Bushong
Branch Chief
Ecological Effects Branch

110201

VALIDATION SHEET CRF#_____ PAGE___ OF_____

FORMULATION:			IA	IB	T	FW	EC	R		
% a.i.	SC#	CHEMICAL NAME	Validator: Larry Turner					Date: 5/8/78		
50%		USB 3153 WP Prodiamine	Test Type: Fish acute 96-hour LC_{50} Channel catfish							
			Test ID.# ES-F4							

CITATION: Rausina, Gary. 1974. Four-day static aquatic toxicity studies with U. S. Borax 3153 Wettable Powder in Rainbow Trout, Bluegills, and Channel catfish. Study conducted by Industrial Bio-test Laboratories. Submitted by U. S. Borax Research Corporation; 1624-EUP-19, Acc#095083, 8/8/75.

RESULTS: Channel catfish 96-hour LC_{50} = 52.0 ppm (95% c.i.= 46.6-58.0 ppm). No mortality occurred at the two lowest concentrations of 18 and 32 ppm; 100% mortality occurred at the highest dose of 78 ppm. Toxic symptoms included rapid respiration, quiescence, and less of equilibrium.

VALIDATION CATEGORY: Supplemental

CATEGORY RATIONALE: Classed as supplemental because the formulated product was tested and polyethylene liners were used in the test vessels.

CATEGORY REPAIRABILITY: No repair is possible.

ABSTRACT: Channel catfish were exposed to concentrations of USB 3153 wettable powder of 0(control), 18, 32, 44, 56, and 78 ppm. Procedures were generally similar to Stephan (EPA 66/3-75-009,1975) except as noted:

1. Source and history of fish were not reported.
2. Polyethylene liners were used in the bioassay vessels.
3. The formulated product was tested.
4. Test was conducted at 18°C, rather than 22°C.

Statistical analysis followed the method of Litchfield and Wilcoxon (1949). When checked on the TI-59 by Finney probit, a very similar value of 52.2 ppm was obtained, with an acceptable chi square of 0.014 for 3 degrees of freedom.

110201

VALIDATION SHEET CRF#_____ PAGE___ OF_____

FORMULATION:			IA	IB	T	FW	EC	R		
% a.i.	SC#	CHEMICAL NAME	Validator: Larry Turner					Date: 5/8/78		
50%		USB 3153 WP Prodiamine	Test Type: Fish acute 96-hour LC_{50} Channel catfish							
			Test ID.# ES-F4							

CITATION: Rausina, Gary. 1974. Four-day static aquatic toxicity studies with U. S. Borax 3153 Wettable Powder in Rainbow Trout, Bluegills, and Channel catfish. Study conducted by Industrial Bio-test Laboratories. Submitted by U. S. Borax Research Corporation; 1624-EUP-19, Acc#095083, 8/8/75.

RESULTS: Channel catfish 96-hour LC_{50} = 52.0 ppm (95% c.i.= 46.6-58.0 ppm). No mortality occurred at the two lowest concentrations of 18 and 32 ppm; 100% mortality occurred at the highest dose of 78 ppm. Toxic symptoms included rapid respiration, quiescence, and less of equilibrium.

VALIDATION CATEGORY: Supplemental

CATEGORY RATIONALE: Classed as supplemental because the formulated product was tested and polyethylene liners were used in the test vessels.

CATEGORY REPAIRABILITY: No repair is possible.

ABSTRACT: Channel catfish were exposed to concentrations of USB 3153 wettable powder of 0(control), 18, 32, 44, 56, and 78 ppm. Procedures were generally similar to Stephan (EPA 66/3-75-009,1975) except as noted:

1. Source and history of fish were not reported.
2. Polyethylene liners were used in the bioassay vessels.
3. The formulated product was tested.
4. Test was conducted at 18°C, rather than 22°C.

Statistical analysis followed the method of Litchfield and Wilcoxon (1949). When checked on the TI-59 by Finney probit, a very similar value of 52.2 ppm was obtained, with an acceptable chi square of 0.014 for 3 degrees of freedom.

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VALIDATION SHEET CRF#_____ PAGE___ OF_____

FORMULATION:			IA	IB	T	FW	EC	R		
% a.i.	SC#	CHEMICAL NAME	Validator:					Date:		
99.6%		USB 3153 Prodiamine	Larry Turner					5/2/78		
			Test Type: Avian acute oral LD_{50} Mallard duck							
			Test ID.# ES-C2							

CITATION: Fletcher, Dale. 1975. Acute Oral Toxicity Study with 3153 Technical in Mallard ducks. 7 p. Study conducted by Industrial Bio-test Laboratories. Submitted by U. S. Borax Research Corporation; 1624-EUP-19, Acc#095083, 8/8/75.

RESULTS: Mallard duck acute oral LD_{50} > 10,000 mg/Kg. No mortality occurred at the single dose level of 10,000 mg/Kg. The majority of test birds possessed symptoms of regurgitation and a yellow-orange fecal discoloration.

VALIDATION CATEGORY: Invalid

CATEGORY RATIONALE: Since the majority of birds regurgitated, it cannot be demonstrated that they actually metabolized or absorbed the pesticide.

CATEGORY REPAIRABILITY: No repair is possible.

ABSTRACT: Young adult Mallard ducks were given a single dose of 10,000 mg/Kg of USB 3153 in gelatin capsules. Only one experimental dose was tested along with controls, each with ten birds. Methods were generally similar to standard protocols, although a number of minor deviations were noted:

1. No housing conditions were reported.
2. Birds were observed for 21 days instead of 14 days.
3. Exact age was not specified.
4. Source and breeding history of birds was not reported; birds were observed for an unreported pre-test period to determine health.

No statistical analysis was performed, because no mortality occurred.

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VALIDATION SHEET CRF#_____ PAGE___ OF_____

FORMULATION:			IA	IB	T	FW	EC	R		
% a.i.	SC#	CHEMICAL NAME	Validator:					Date:		
98.4%		USB 3153 Prodiamine	Larry Turner					5/2/78		
			Test Type: Avian dietary LC_{50} Bobwhite quail							
			Test ID.# ES-D1							

CITATION: Fink, Robert. 1975. Eight-day Dietary LC_{50} - Bobwhite quail, USB 3153, Final report. 8 p. Study conducted by Truslow Farms. Submitted by U. S. Borax Research Corporation; 1624-EUP-19, Acc# 095083, 8/8/75.

RESULTS: Bobwhite quail dietary LC_{50} >10,000 ppm. No mortality occurred at the four lowest doses; 10% mortality occurred at the highest level of 10,000 ppm. Wing droop and mild depression were toxic symptoms reported at 10,000 ppm.

VALIDATION CATEGORY: Core

ABSTRACT: Bobwhite quail were fed dietary concentrations of USB 3153 of 0(control), 464, 1000, 2150, 4640, and 10,000 ppm. Methods generally followed the proposed guidelines except that housing conditions were not reported and dosage levels were further apart than recommended.

No statistical analysis was performed due to low mortality.

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VALIDATION SHEET CRF#_____ PAGE___ OF_____

FORMULATION:			IA	IB	T	FW	EC	R		
% a.i.	SC#	CHEMICAL NAME	Validator:					Date:		
98.4%		USB 3153 Prodiamine	Larry Turner					5/2/78		
			Test Type: Avian dietary LC_{50} Mallard duck							
			Test ID.# ES-E1							

CITATION: Fink, Robert. 1975. Eight-day Dietary LC_{50} - Mallard ducks, USB 3153, final report. 8 p. Study conducted by Truslow Farms. Submitted by U. S. Borax Research Corporation; 1624-EUP-19, Acc# 095083, 8/8/75.

RESULTS: Mallard duck dietary LC_{50} > 10,000 ppm. No mortality occurred at any tested level through 10,000 ppm, nor were any toxic symptoms observed. Food consumption was slightly, but not significantly, reduced at 10,000 ppm.

VALIDATION CATEGORY: Core

ABSTRACT: Mallard ducks were fed dietary concentrations of USB 3153 of 0(control), 464, 1000, 2150, 4640, and 10,000 ppm. Methods generally followed proposed guidelines except that housing conditions were not reported, and dosage levels were further apart than recommended.

No statistical analysis was performed because there was no mortality.

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VALIDATION SHEET CRF#_____ PAGE___ OF_____

FORMULATION:			IA	IB	T	FW	EC	R		
% a.i.	SC#	CHEMICAL NAME	Validator: Larry Turner					Date: 5/2/78		
99.6%		USB 3153 Prodiamine	Test Type: Fish acute 96-hour LC_{50} Rainbow Trout							
			Test ID.# ES-G1							

CITATION: Rausina, Gary. 1975. Four-day Static Aquatic Toxicity Studies with U. S. Borax 3153 Technical, in rainbow trout, bluegills, and channel catfish. Study conducted by Industrial Bio-test Laboratories. Submitted by U. S. Borax Research Corporation; 1624-EUP-19, Acc# 095083, 8/8/75.

RESULTS: Rainbow Trout 96-hour LC_{50} = 47.3 ppm (95% c.i. = 30.6-73.3 ppm). Ten percent mortality occurred at the lowest dose level of 10.0 ppm; 80% mortality occurred at the highest dose level of 100 ppm. Toxic symptoms included rapid respiration, loss of equilibrium, and discoloration.

VALIDATION CATEGORY: Supplemental

CATEGORY RATIONALE: Classed as supplemental because polyethylene liners were used and no measurements were made of actual concentrations.

CATEGORY REPAIRABILITY: No

ABSTRACT: Rainbow trout were exposed to concentrations of USB 3153 of 0(control), 10.0, 18.0, 32.0, 56.0, and 100.0. Procedures were generally similar to Stephan (EPA-660/3-75-009,1975) except that source and history of fish were not reported and polyethylene liners were used in bioassay vessels. EPA reconstituted water was used for the test.

Statistical analysis was performed according to method of Litchfield and Wilcoxon (1949). When checked with the TI-59 calculator, a Finney probit yielded a comparable value of 47.1 ppm with an acceptable chi square of 0.824 for 3 degrees of freedom.

prodiamine

Bluegill sunfish 96-hr LC_{50}
USB 3153 tech
Finney probit

L. Turner
5/8/78

1.		
1.		
10.		
1.8		
3.		
10.		
3.2		
5.		
10.		
5.6		
7.		
10.		
10.		
9.		
10.		
2.420	M	
3.775	YINT	
2.570	LW M	
0.095	CHI²	
3.178	LD50	
2.191	LOCL	
4.608	UPCL	
0.948	LD10	
0.461	LOCL	
1.946	UPCL	
10.656	LD90	
5.196	LOCL	
21.853	UPCL	

Rainbow trout 96-hr LC_{50}
USB 3153 tech
Finney probit

L. Turner
5/8/78

10.		
1.		
10.		
18.		
1.		
10.		
32.		
8.		
10.		
56.		
6.		
10.		
00.		
8.		
10.		
2.402	M	
0.981	YINT	
2.608	LW M	
0.824	CHI²	
47.122	LD50	
31.562	LOCL	
70.309	UPCL	
13.788	LD10	
7.120	LOCL	
26.702	UPCL	
161.040	LD90	
68.142	LOCL	
380.583	UPCL	

110201

VALIDATION SHEET CRF#_____ PAGE___ OF_____

FORMULATION:			IA	IB	T	FW	EC	R		
% a.i.	SC#	CHEMICAL NAME	Validator:					Date:		
99.6%		USB 3153 Prodiamine	Larry Turner					5/2/78		
			Test Type: Fish acute 96-hour LC_{50} Bluegill sunfish							
			Test ID.# ES-F1							

CITATION: Rausina, Gary. 1975. Four-day static aquatic toxicity studies with U. S. Borax 3153 Technical, in rainbow trout, bluegills, and channel catfish. Study conducted by Industrial Bio-test Laboratories. Submitted by U. S. Borax Research Corporation; 1624-EUP-19, Acc# 095083, 8/8/75.

RESULTS: Bluegill sunfish 96-hour LC_{50} = 3.18 ppm (95% c.i.=1.98-5.08 ppm) Ten percent mortality occurred at the lowest level of 1.0 ppm; 90% mortality occurred at the highest level of 10.0 ppm. Toxic symptoms included quiescence, rapid respiration, and discoloration.

VALIDATION CATEGORY: Supplemental

CATEGORY RATIONALE: Classed as supplemental because polyethylene liners were used and actual concentrations were not measured.

CATEGORY REPAIRABILITY: No

ABSTRACT: Bluegill sunfish were exposed to concentrations of USB 3153 of 0(control), 1.0, 1.8, 3.2, 5.6, and 10.0 ppm. Procedures were generally similar to Stephan (EPA-660/3-75-009,1975) except that source and history of fish were not reported, polyethylene liners were used in bioassy vessels, and fish were tested at a temperature of 18°C, rather than 22°C. EPA reconstituted water was used for the test.

Statistical analysis was performed according to method of Litchfield and Wilcoxon (1949). When checked on the TI-59 calculator by Finney Probit, a very similar LC_{50} of 3.18 ppm was obtained with an acceptable chi square of 0.095 for 3 degrees of freedom.

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VALIDATION SHEET CRF#_____ PAGE___ OF_____

FORMULATION:			IA	IB	T	FW	EC	R		
% a.i.	SC#	CHEMICAL NAME	Validator:					Date:		
99.6%		USB 3153 Prodiamine	Larry Turner					5/2/78		
			Test Type: Fish acute 96-hour LC_{50} Channel catfish							
			Test ID.# ES-F2							

CITATION: Rausina, Gary. 1975. Four-day Static Aquatic Toxicity Studies with U. S. Borax 3153 Technical, in rainbow trout, bluegills, and channel catfish. Study conducted by Industrial Bio-test Laboratories. Submitted by U. S. Borax Research Corporation; 1624-EUP-19, Acc# 095083, 8/8/75.

RESULTS: Channel catfish 96-hour LC_{50} >100 ppm. No mortality occurred at any tested level. Mild toxic symptoms of quiescence and rapid respiration occurred at higher dose levels.

VALIDATION CATEGORY: Supplemental

CATEGORY RATIONALE: Classed as supplemental because polyethylene liners were used and actual concentrations were not measured. Also dose levels were too widely spread.

CATEGORY REPAIRABILITY: No

ABSTRACT: Channel catfish were exposed to concentrations of USB 3153 of 0(control), 0.1, 1.0, 10.0, and 100.0 ppm. Procedures were generally similar to Stephan (EPA-660/3-75-009,1975) except that source and history of fish were not reported, polyethylene liners were used in bioassy vessels, fish were tested at a temperature of 18°C, rather than 22°C, and doses were much further apart than recommended, as befits a screening test.

No statistical analysis was performed, because no mortality occurred.

110201

VALIDATION SHEET CRF#_____ PAGE___ OF_____

FORMULATION:			IA	IB	T	FW	EC	R		
% a.i.	SC#	CHEMICAL NAME	Validator: Larry Turner					Date: 5/8/78		
50% WP		USB 3153 WP Prodiamine	Test Type: Fish acute 96-hour LC_{50} Rainbow Trout							
			Test ID.# ES-G2							

CITATION: Rausina, Gary. 1974. Four-day Static Aquatic Toxicity Studies with U. S. Borax 3153 Wettable powder in Rainbow Trout, Bluegills, and Channel catfish. Study conducted by Industrial Bio-test Laboratories. Submitted by U. S. Borax Research Corporation; 1624-EUP-19, Acc#095083, 8/8/75.

RESULTS: Rainbow Trout 96-hour LC_{50} = 18.6 ppm (95% c.i. 15.6-22.1 ppm). No mortality occurred at the second lowest concentration of 14 ppm, although 10% mortality occurred at 10 ppm; at the highest concentration of 32 ppm, 100% mortality occurred. Toxic symptoms included rapid respiration, surfacing, and loss of equilibrium.

VALIDATION CATEGORY: Supplemental

CATEGORY RATIONALE: Classed as supplemental because the formulated product was tested and polyethylene liners were used in the test vessels.

CATEGORY REPAIRABILITY: No repair is possible.

ABSTRACT: Rainbow trout were exposed to concentrations of USB 3153 wettable powder of 0(control), 10, 14, 18, 25, and 32 ppm. Procedures were generally similar to Stephan (EPA 660/3-75-009,1975), except as noted:

1. Source and history of fish were not reported.
2. Polyethylene liners were used in the bioassay vessels.
3. The formulated product was tested.

Statistical analysis followed the method of Litchfield and Wilcoxon (1949). When checked on the TI-59 calculator, a Finney probit yielded a comparable LC_{50} of 19.2 ppm with an acceptable chi square of 6.62 for 3 degrees of freedom.

prodiamine

Channel catfish 96-hr LC_{50}
USB 3153 WP
Finney probit

L. Turner
5/8/78

1E.		
C.		
1C.		
3E.		
C.		
1C.		
4E.		
1.		
1C.		
5E.		
2.		
1C.		
7E.		
1C.		
1C.		
17.559	M	
-25.156	YINT	
1.140	LW M	
0.014	CHI^2	
52.170	LD50	
47.912	LOCL	
56.806	UPCL	
44.097	LD10	
38.586	LOCL	
50.396	UPCL	
61.721	LD90	
53.223	LOCL	
71.575	UPCL	

Rainbow Trout 96-hr LC_{50}
USB 3153 WP
Finney probit

L. Turner
5/8/78

1C.		
1.		
1C.		
1E.		
C.		
1C.		
1E.		
2.		
1C.		
25.		
E.		
1C.		
32.		
1C.		
1C.		
7.542	M	
-4.676	YINT	
1.357	LW M	
6.621	CHI^2	
19.190	LD50	
16.700	LOCL	
22.050	UPCL	
12.974	LD10	
10.385	LOCL	
16.208	UPCL	
28.383	LD90	
22.677	LOCL	
35.525	UPCL	

Bluegill Sunfish 96-hr LC_{50}
USB 3153 WP
Finney probit

L. Turner
5/8/78

1C.		
C.		
1C.		
1E.		
1.		
1C.		
1E.		
5.		
1C.		
25.		
7.		
1C.		
32.		
1C.		
1C.		
8.326	M	
-5.734	YINT	
1.319	LW M	
1.925	CHI^2	
19.465	LD50	
17.068	LOCL	
22.197	UPCL	
13.654	LD10	
11.116	LOCL	
16.773	UPCL	
27.747	LD90	
22.548	LOCL	
34.145	UPCL	

110201

VALIDATION SHEET CRF#_____ PAGE___ OF_____

FORMULATION:			IA	IB	T	FW	EC	R		
% a.i.	SC#	CHEMICAL NAME	Validator:					Date:		
50%		USB 3153 WP Prodiamine	Larry Turner					5/8/78		
			Test Type: Fish acute 96-hour LC_{50} Bluegill sunfish							
			Test ID.# ES-F-3							

CITATION: Rausina, Gary. 1974. Four-day Static Aquatic Toxicity Studies with U. S. Borax 3153 Wettable Powder in Rainbow Trout, Bluegills, and Channel Catfish. Study conducted by Industrial Bio-test Laboratories. Submitted by U. S. Borax Research Corporation; 1624-EUP-19, Acc#095083, 8/8/75.

RESULTS: Bluegill sunfish 96-hour LC_{50} = 19.6 ppm (95% c.i. 16.6-23.2 ppm). No mortality occurred at the lowest concentration of 10 ppm; 100% mortality occurred at the highest concentration of 32 ppm. Toxic symptoms included rapid respiration, quiescence, surfacing, and loss of equilibrium.

VALIDATION CATEGORY: Supplemental

CATEGORY RATIONALE: Classed as supplemental because the formulated product was tested and polyethylene liners were used in the test vessels.

CATEGORY REPAIRABILITY: No repair is possible

ABSTRACT: Bluegill sunfish were exposed to concentrations of USB 3153 wettable powder of 0(control), 10, 14, 18, 25, and 32 ppm. Procedures were generally similar to Stephan (EPA 660/3-75-009, 1975) except as noted:

1. Source and history of fish were not reported.
2. Polyethylene liners were used in the bioassy vessels.
3. The formulated product was tested.
4. Fish were tested at 18°C, rather than 22°C.

Statistical analysis followed the method of Litchfield and Wilcoxon (1949). When checked on the TI-59 calculator by Finney probit, a very similar value of 19.5 ppm was obtained, with an acceptable chi square value of 1.925 for 3 degrees of freedom.