

US EPA ARCHIVE DOCUMENT



## DATA EVALUATION RECORD

1. **CHEMICAL:** BAS 514 H Quinclorac.  
Shaughnessey number: Not available.
2. **TEST MATERIAL:** Registration Number 150 732; Batch No. N 32;  
98% purity; a solid (powder).
3. **STUDY TYPE:** Freshwater Fish Static Acute Toxicity Test.  
Species Tested: Rainbow trout (Salmo gairdneri).
4. **CITATION:** Munk, R. 1988. Report on the study of the acute  
toxicity of Rainbow trout (Salmo gairdneri) to Registration  
Number 150 732. Prepared by BASF Aktiengesellschaft, West  
Germany. Registration Document No. 88/0527. Submitted by  
BASF Corporation Chemicals Division, Parsippany, New Jersey.  
MRID No. 410635-48.
5. **REVIEWED BY:**  
  
Kimberly D. Rhodes  
Associate Scientist  
KBN Engineering and  
Applied Sciences, Inc.  
  
Signature: *Kimberly D. Rhodes*  
Date: *August 30, 1989*
6. **APPROVED BY:**  
  
Michael L. Whitten, M.S.  
Staff Toxicologist  
KBN Engineering and  
Applied Sciences, Inc.  
  
Signature: *Michael L. Whitten*  
Date: *8-30-89*  
  
Henry T. Craven  
Supervisor, EEB/HED  
USEPA  
  
Signature: *Henry T. Craven*  
Date: *7/12/90*
7. **CONCLUSIONS:** This study appears scientifically sound and  
fulfills the Guideline requirements for a 96-hour static  
acute toxicity study for a coldwater fish species. The 96-  
hour LC50 based upon nominal concentrations of BAS 514 H  
Quinclorac to rainbow trout (Salmo gairdneri) was greater  
than 100 mg/L. Therefore, BAS 514 H Quinclorac is  
classified as practically non-toxic to rainbow trout. The  
NOEC was determined to be 100 mg/L nominal concentration.
8. **RECOMMENDATIONS:** N/A

9. BACKGROUND:10. DISCUSSION OF INDIVIDUAL TESTS: N/A11. MATERIALS AND METHODS:

- A. Test Animals: Rainbow trout (Salmo gairdneri) used in this test were maintained in a flow-through tank containing tap water for approximately two months. The tap water was aerated and cleaned by an activated carbon filter. The holding water was characterized as having a total hardness of approximately 2.5 mmol/L, a pH of 8.0 and a dissolved oxygen concentration of greater than 60% of maximum saturation. The water temperature during this holding period was 12 - 19°C. The fish were fed Growing Feed F/B 50 ad libitum during the holding period, except during 24 hours prior to test initiation. The fish were treated twice with 0.05 mg/L malachite green chloride and once with 10 mg/L tetracycline hydrochloride during the holding period. The rainbow trout were adapted to the test water and test temperature 15 days prior to test initiation. There was no mortality during the adaptation period. The rainbow trout used for this experiment had a mean weight of 3.4 g (2.1 - 4.9 g) and a mean length of 69 mm (58 - 78 mm).
- B. Test System: The test was conducted in 80 X 35 X 46 cm glass aquaria containing 100 L of test solution. All test chambers were aerated during the test. The dilution water was reconstituted freshwater prepared from fully demineralized tap water and was characterized as having a total hardness of 2.5 mmol/L and a pH of 8.0. The temperature was maintained at 12 ± 1°C. The photoperiod provided 16 hours of light and 8 hours of darkness daily.
- C. Dosage: 96-hour static acute test.
- D. Design: Two concentrations of the test compound (50 and 100 mg/L) and a control were tested. The control and 50 mg/L treatment groups were not replicated. The 100 mg/L treatment group was replicated three times. Ten rainbow trout were randomly placed into each replicate vessel approximately 24 hours after the test substance was added into the aquaria. Organism loading was 0.34 gram of fish per liter of test water. All test organisms were observed at 1, 4, 24, 48, 72, and 96 hours of exposure for mortality and abnormal

effects. The water quality parameters (temperature, dissolved oxygen and pH) were measured in the control and each concentration at 1, 24, 48, 72 and 96 hours of exposure. The test concentrations were determined by HPLC at test initiation and termination.

- E. **Statistics:** The 96-hour LC50 value was determined to be greater than the highest test concentration since no mortality occurred.
12. **REPORTED RESULTS:** The mean measured concentrations of BAS 514 H Quinclorac were 46.5 mg/L and 97.2 mg/L. Both mean measured concentrations represent 93% of the nominal concentrations. During this test, no mortalities or apparent adverse effects were observed among the rainbow trout exposed to the treatment levels of BAS 514 H Quinclorac. The 96-hour LC50 for rainbow trout exposed to BAS 514 H Quinclorac was empirically estimated to be greater than 100 mg/L. The no observed effect concentration (NOEC) was determined to be 100 mg/L. No undissolved test material was observed during the testing period. During the 96-hour test, the temperature ranged from 11°C to 13°C, the pH ranged from 7.8 to 8.1 and the dissolved oxygen concentration ranged from 7.9 to 11.4. The water quality parameters remained acceptable for survival of the rainbow trout throughout the 96-hour exposure.
13. **STUDY AUTHOR'S CONCLUSIONS/QUALITY ASSURANCE MEASURES:**  
No conclusions were made by the author.
- A GLP compliance statement was included in the report and the study was audited by a QA unit. A statement of quality assurance was included in the report, indicating that the study was conducted in accordance with U.S. EPA Good Laboratory Practice Standards: Pesticide Programs (40 CFR 160).
14. **REVIEWER'S DISCUSSION AND INTERPRETATION OF STUDY RESULTS:**

- A. **Test Procedure:** The test procedures were generally in accordance with protocols recommended by the Guidelines, but deviated from the SEP as follows:
- o Aeration was used in the test. This could cause volatilization of the test material. Further, the test solution was stirred for 24 hours before the fish were added to the test vessels. Normally, under these circumstances the test concentrations must be measured. However, other toxicity tests submitted along with this

test suggest that the BAS 514 H does not volatilize under these conditions.

o The "main study" was terminated after 48 hours because unexplained mortality occurred at the 50 mg/l concentration level. The raw data of this study should have been submitted along with a possible explanation for the mortality.

o The test material was identified in the study as "REG. NO. 150 732". The chemical name of the compound should be provided.

o The SEP states that temperature should be measured continuously (hourly) in at least one test vessel during the entire study period. If the temperature is controlled by a water bath, measurements can be recorded every six hours. The report did not mention how the temperature was regulated and the temperature was only measured every 24 hours.

o The SEP states that static acute tests are initiated either by adding the test material to the test chambers after the test fish are added or by adding the fish to the test chambers within 30 minutes after the test material is added to the dilution water. This study added the fish 24 hours after preparation of the test material.

o The SEP recommends a 16-hour light and an 8-hour dark photoperiod with a 15- to 30-minute transition period between light and dark. The report did not state whether a 15- to 30-minute transition period between light and dark was maintained.

B. Statistical Analysis: The 96-hour LC50 was determined to be greater than the highest test concentration since no mortality occurred.

C. Discussion/Results: The study results appear to be scientifically valid. The 96-hour LC50 value based upon nominal concentrations of BAS was determined to be greater than 100 mg/L. Therefore BAS 514 H Quinclorac is classified as practically non-toxic to rainbow trout (Salmo gairdneri). The no-observed effect concentration (NOEC) was determined to be 100 mg/L nominal concentration.

D. Adequacy of the Study:

- (1) **Classification:** Core.
- (2) **Rationale:** Although the test procedures deviated from the guidelines, the reviewer does not believe they significantly affected the toxicity results.
- (3) **Repairability:** N/A

15. COMPLETION OF ONE-LINER FOR STUDY: Yes, 08-25-89.

Shanghai No.	Chemical Name	Chemical Class	Page	of	Reviewer/Date	Valid/Stat
Study/Species/Lab/Accession 14-Day Single Dose Oral LD50	Chemical & S.I. BAS 514 H Quinclorac (Registration No. 150 732)	Results				
Species	LD50 = mg/kg ( 95% C.L. )	Contr. Mort. (X) =				
Lab	Slope = # Animals/Level =	Age (Days) =				
Acc.	14-Day Dose Level mg/kg/(X Mortality)					
	Comments:					
14-Day Single Dose Oral LD50	LD50 = mg/kg ( 95% C.L. )	Contr. Mort. (X) =				
Species	Slope = # Animals/Level =	Age (Days) =				
Lab	14-Day Dose Level mg/kg/(X Mortality)					
Acc.	Comments:					
8-Day Dietary LC50	LC50 = ppm ( 95% C.L. )	Contr. Mort. (X) =				
Species	Slope = # Animals/Level =	Age (Days) =				
Lab	8-Day Dose Level ppm/(X Mortality)					
Acc.	Comments:					
8-Day Dietary LC50	LC50 = ppm ( 95% C.L. )	Contr. Mort. (X) =				
Species	Slope = # Animals/Level =	Age (Days) =				
Lab	8-Day Dose Level ppm/(X Mortality)					
Acc.	Comments:					
48-Hour LC50	LC50 = PP ( 95% C.L. )	Contr. Mort. (X) =				
Species	Slope = # Animals/Level =	Sol. Contr. Mort. (X) =				
Lab	48-Hour Dose Level pp/(X Mortality)					
Acc.	Comments:					
96-Hour LC50	LC50 = >100 ppm ( 95% C.L. )	Con. Mort. (X) = 0				
Species	Slope = N/A	Sol. Con. Mort. (X) = N/A				
Lab	# Animals/Level = 30	Temp. = 12 ± 1°C				
Acc.	96-Hour Dose Level pp/(X Mortality)					
	Comments: Based on nominal concentration					
96-Hour LC50	LC50 = PP ( 95% C.L. )	Con. Mort. (X) =				
Species	Slope = # Animals/Level =	Sol. Con. Mort. (X) =				
Lab	96-Hour Dose Level pp/(X Mortality)					
Acc.	Comments:					

K.R.  
09/25/89 Core

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