

US EPA ARCHIVE DOCUMENT

4/27/77

EEE BRANCH REVIEW

DATE: IN _____ OUT _____ IN 2/10/77 OUT _____ IN _____ OUT _____

FISH & WILDLIFE ENVIRONMENTAL CHEMISTRY EFFICACY

FILE OR REG. NO. 201-274

PETITION OR EXP. PERMIT NO. _____

DATE DIV. RECEIVED _____

DATE OF SUBMISSION _____

DATE SUBMISSION ACCEPTED 2/8/77 3CID-NA

TYPE PRODUCT(S): D, H, F, N, R, S

PRODUCT MGR. NO. F. Gee (16)

PRODUCT NAME(S) BIDRIN 8

COMPANY NAME Shell Chemical Co.

SUBMISSION PURPOSE Fish Data

CHEMICAL & FORMULATION Bidrin

2.0 Introduction

The first EC-Review (5/20/75) of the Bidkin Environmental Impact Statement (PR 70-15) of February 1972 notes the need for fish accumulation and other EC-data [hydrolysis, photolysis, leaching, and microbial]. Shell was informed of these deficiencies in RD's letter of May 15, 1975.

The current fish-data submission (TIR-24-633-76-B) is Shell's first substantive response. Some clarifying information on the microbial data was submitted (answers to Question #5; A, B, D and E of our May 15 letter) ~~was reviewed~~ ~~(~~submitted~~ ~~submitted~~)~~ and reviewed (5/11/76).

2.0 Directions for Use

Refers to the review of 10/22/75.

3.0

~~3.0~~ Fish Accumulation

"BIO-ACCUMULATION OF BIDRIN INSECTICIDE IN FISH - RESIDUE LEVELS OF BIDRIN AND TWO METABOLITES (SD-12210 AND SD-9129) IN RAINBOW TROUT RESULTING FROM THE EXPOSURE TO 0.5 PPM BIDRIN IN WATER"; REPORT TIR-24-633-76-B

The trout (21; Avg ca ⁴⁵/₄₅ gms) in this study were maintained (56°F) in ~~area~~ aerated water (135-liters) containing Bidrin (ca 0.5 ppm); at intervals of 3 to 4 days the fish were transferred to a freshly prepared solution of Bidrin. The testing included exposure (31-days) and depuration (17-days). Samples of ^(live whole) fish and water were ~~analyzed~~ periodically sampled for analysis (GLC-AFID), by ~~stetts methods~~ ~~methods~~ ~~methods~~. The included methodology indicates A sensitivity (MOC) in ~~both~~ water and tissue ~~of~~ ~~was~~ of ~~ca~~ 0.01 ppm for ^{both} Bidrin and its degradate SD-9129 ~~compound I~~ (Azodrin); and, 0.02-0.03 ppm for SD-12210 (compound II). The Recoveries (whole trout spiked with Bidrin 0.05 ppm; Azodrin ^{0.08 ppm}) ~~avg's~~ for Bidrin 93% and Azodrin 105%.

It is noted that compound II is relatively unstable (Recovery ca 79%) and its glycoside ~~was~~ used as ^{the} standard in the determination of compound II.

Summary of Rainbow Trout Data.

Residues (ppm)

DAY	Water	Whole fish residues		
	Bidren (Avg)	Bidren	SD-9129	SD-12210
0	0.49	<0.01	<0.01	<0.02
10	0.49	<0.01	<0.01	<0.02
20	0.49	0.01	<0.01	<0.02
25	0.50	0.01	<0.01	20.03
31	0.44	0.01	<0.01	<0.03
Depuration				
1	none	<0.01	<0.01	—
4	none	<0.01	<0.01	—
12	none	<0.01	<0.01	—

9/9/77
 See Rev for Product

Conclusion [see Rev for product 201-274 (9/77)]

The ~~chemical~~ methodology shows accumulation factors for Bidrin and its degradates II & III (~~IV~~) of less than 20, in Rainbow trout, ~~see~~

~~CO different (0.5 ppm) for 30 days~~

~~The stated objective of the test was "... to determine the accumulation of BIDRIN ... and its metabolites~~

~~SD-12210 and SD-9129 in rainbow trout exposed to water treated with Bidrin. Although the study was conducted with unlabelled Bidrin the methodology ~~was~~ ^{is} sufficient adequate and showed the accumulation factors were less than 1.~~

Note:
~~Deficiencies~~

^{fish}
 The submitted data, ~~however~~ ^{may not} be sufficient to assess the environmental ~~hazards~~ ^{hazards} associated with ~~new uses of~~ ^{new} ~~uses of Bidrin.~~ ^{uses of Bidrin.}

E. R. Brattus 4/27/77
 Environmental Chemistry Section
 EEE Branch