MRID #: 00085958

DATA EVALUATION RECORD

1. CHEMICAL: Profenofos

2. FORMULATION: 90.6% active ingredient

3. CITATION: Hoberg, J. and Dean, J. (1979) The toxicity of CGA-15324 to fathead minnow (Pimephales promelas) eggs and fry, Research Report, Report # BW-79-6-490, EG & G, Bionomics submitted by Ciba-Geigy Corp. under EPA Reg. No. 100-598, 100-599, CDL Acc# 246216, p. 437.

4. REVIEWED BY: Dennis J. McLane
Biologist
EEB/HED

5. DATE REVIEWED: December 8, 1981

6. TEST TYPE: Eggs and fry fathead minnow (Pimephales promelas)

7. REPORTED RESULTS: Based on reduced survival and total length of fry exposed to 4.4 ug/l CGA-15324. The minimum threshold concentration (MTC) of this compound to fathead minnow eggs and fry was >2.0<4.4 ug/l.

8. REVIEWER'S CONCLUSION: This study is scientifically sound, however, it does not meet guideline requirments. The no effect level is >2.0<4.4 ug/l, which indicates this compound is very highly toxic to this portion of the fathead minnow lifecycle.

Upgrade:

This study has been upgraded to "Core". See Review by R. Feltmeusen (8/30/92) for rationale

9. METHODS/MATERIALS:

A. Test Procedures

The egg and fry exposure was initiated within 48 hours after egg fertilization and continued through 30 days post-hatch. Two egg cups were used per level. Each cup contained 60 eggs. The concentration levels were 31 ug/l, 14 ug/l, 7.6 ug/l, 4.4 ug/l, and 2.0 ug/l. In addition, solvent control and control were prepared.

B. Statistical Analysis

Analysis of variance and Dunnet's procedure were used to determine if there were any statistically significant differences from the control.

C. Discussion/Results

Mean measured Concentration (ug/l)		Hatch (%)	Survival (%)	31 Days Total length (mm)	Weight (mg)
31	A	92	0	-	-
	B	92	0	-	-
14	A	83	0	-	-
	B	88	0	-	
7.6	A	80	20	16(4)	46
	B	83	30	15(2)	34
4.4	A	87	62	18(3)	72
	B	93	62	19(3)	76
2.0	A	85	88	20(2)	61
	B	77	88	20(1)	59
solvent	A	95	75	22(2)	74
control	B	90	92	21(2)	65
control	A	85	92	20(1)	59
	B	85	88	21(1)	65

10. REVIEWER'S EVALUATION:

A. Test Procedures

The test methods and procedures are scientifically sound.

B. Statistical Analysis

The SAS anova program indicates that the no effect level is >2.0 <4.4 ug/l.

C. Discussion/Results

This study does not meet the requirement requested in EEB's review (by H. Craven), 10-1-79. Salvelinus fontinalis, brook trout, is more sensitive and the requested species. However, the study is scientifically sound.

D. Conclusion

1. Category - ~~Supplemental~~ "Core" RWJ. 8/30/92
2. Rationale - See Discussion/Results
3. Repairability - ~~Not repairable, the species cannot be changed~~.

DUNCAN'S MULTIPLE RANGE TEST FOR VARIABLE RESPONSE

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05 DF=7 MS=.0028929

GROUPING	MEAN	N	VARIABLE	
A	0.900000	2	A	control
A	0.880000	2	C	2.0
A	0.835000	2	B	Solvent control
B	0.620000	2	D	4.4
C	0.250000	2	E	7.6
D	0.000000	2	F	14.0
D	0.000000	2	G	31.0

S T A T I S T I C A L A N A L Y S I S S Y S T E M 9:25 WEDNESDAY, DECEMBER 9, 198

VARIABLE=A

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	STD ERROF OF MEAN
RESPONSE	2	0.90000000	0.02828427	0.88000000	0.92000000	0.02000000

VARIABLE=B

RESPONSE	2	0.83500000	0.12020815	0.75000000	0.92000000	0.08500000

VARIABLE=C

RESPONSE	2	0.88000000	0	0.88000000	0.88000000	0

VARIABLE=D

RESPONSE	2	0.62000000	0	0.62000000	0.62000000	0

VARIABLE=E

RESPONSE	2	0.25000000	0.07071068	0.20000000	0.30000000	0.05000000

VARIABLE=F

RESPONSE	2	0	0	0	0	0

VARIABLE=G

RESPONSE	2	0	0	0	0	0

COMMAND ?

level is >2.0 < 4.4 mg/l which is very highly toxic to the fathead minnow lifecycle.