S406678
SUBMISSION #

129011
SHAUGHNESSY NO.   REVIEW NO.

<u>EEB REVIEW</u>

DATE: IN __11-26-91__   DATE: OUT __3-29-93__

FILE OR ID NO. __MRID 418750-07__

PETITION OR EXP. NO. _____

DATE OF SUBMISSION _____10-28-91_____

DATE RECEIVED BY EFED _____11-26-91_____

RD REQUESTED COMPLETION DATE _____5-5-92_____

EEB ESTIMATED COMPLETION DATE _____03-15-93_____

RD ACTION CODE/TYPE OF REVIEW ___Data Evaluation Record___

                              ___Freshwater Invertebrate___

                              ___Life-Cycle -- *Daphnia magna*___

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

DATA ACCESSION NO(S). _____

PRODUCT MANAGER (NO.) _____Cynthia Giles-Parker_____

PRODUCT NAME(S) __Fenbuconazole, RH7592, Fenethanil, Indar, RH-57,592__

COMPANY NAME __Rohm and Haas__

SUBMISSION PURPOSE __Meet EEB Study requirements__

SHAUGHNESSY NO.	CHEMICAL & FORMULATION(S)	% A.I.
129011	Fenbuconazole	98.3
	Inert	1.7

DATA EVALUATION RECORD

1. **CHEMICAL:** RH-7592.
    Shaughnessey No. 129011.

2. **TEST MATERIAL:** RH-7592 Technical; Lot No. BPP-3-1786R;
    96.7% active ingredient; a white powder.

3. **STUDY TYPE:** 72-4. Freshwater Invertebrate Flow-Through
    Life-Cycle Toxicity Test. Species Tested: *Daphnia magna*.

4. **CITATION:** Blakemore, G.C. and D. Burgess. 1991. Chronic
    Toxicity of RH-7592 to *Daphnia magna* Under Flow-Through Test
    Conditions. Final Report No. 38143. Rohm and Haas Report
    No. 89RC-0084. Prepared by Analytical Bio-Chemical
    Laboratories, Inc., Columbia, MO. Submitted by Rohm and
    Haas Company, Spring House, PA. EPA MRID No. 418750-07.

5. **REVIEWED BY:**

    Louis M. Rifici, M.S.   **Signature:** *Louis M Rifici*
    Associate Scientist
    KBN Engineering and   **Date:** 12/3/92
    Applied Sciences, Inc.

6. **APPROVED BY:**

    Rosemary Graham Mora, M.S.   **Signature:** *Rosemary Graham Mora*
    Associate Scientist
    KBN Engineering and   **Date:** 12/8/92
    Applied Sciences, Inc.

                                         B. Huson 3/22/9
    Henry T. Craven, M.S.   **Signature:**
    Supervisor, EEB/EFED
    USEPA   **Date:** *Henry T. Craven* 4/19/93

    but does not (...)

7. **CONCLUSIONS:** This study is scientifically sound ~~and meets~~
    the guideline requirements for a chronic, flow-through
    toxicity test using the freshwater invertebrate, *Daphnia
    magna*. The 21-day EC_{50} was 0.10 mg a.i./l mean measured
    concentration. The MATC was >0.078 and <0.15 mg a.i./l
    (geometric mean MATC = 0.11 mg a.i./l).

8. **RECOMMENDATIONS:** N/A.

9. **BACKGROUND:**

10. **DISCUSSION OF INDIVIDUAL TESTS:** N/A.

11. **MATERIALS AND METHODS:**

A.   **Test Animals:** *Daphnia magna* (<24 hours old) were
       obtained from in-house cultures. The primary culture
       was obtained from the Columbia National Fisheries
       Research Laboratory in Columbia, MO. The cultures were
       housed in a temperature-controlled area (20 ±2°C) on a
       16-hour daylight photoperiod with 30-minute dawn and
       dusk simulations. The light intensity was maintained
       at 40-80 ft-candles using cool white fluorescent tubes.

       Adult daphnids were fed a suspension of algae
       (*Selenastrum capricornutum* and *Ankistrodesmus falcatus*)
       supplemented with a trout chow and yeast suspension.
       The adults were approximately 21-days old with many
       prior broods.

B.   **Test System:** A 0.5-1 proportional diluter
       intermittently delivered an average of 3.6
       ml/chamber/minute (or 5.1 volume replacements per day)
       to each of four replicate test vessels per
       concentration. Flow splitting boxes were used to mix
       and divide each test solution. To minimize turbulence,
       the solutions were introduced into the test vessels
       using 14-gauge hypodermic needles. The test material
       was allowed to run through the system for 7 days before
       use. Diluter operation was observed twice daily during
       the study.

       The test vessels were 1-liter glass beakers with
       notched drains covered by 50-mesh stainless steel
       screen. Test solution depth was 11.5 cm. The test
       chambers were positioned in a temperature-controlled
       water bath set to maintain 20 ±2°C. The photoperiod
       was 16-hour light/8-hour dark with 30-minute low light
       transitions between light and dark. The light
       intensity of the cool-white fluorescent tubes was 49-53
       ft-candles.

       The dilution water was a mixture of soft-blended water
       and well water with a final hardness of 156-176 mg/l as
       $CaCO_3$, an alkalinity of 160-200 mg/l as $CaCO_3$, a pH of
       8.0-8.4, and a conductivity of 320-440 μmhos/cm.

       The test substance was dissolved in acetone and mixed
       thoroughly. The resulting stock solution (10,000 mg
       a.i./l) was delivered to the diluter using a syringe

dispenser. Two stock solutions were prepared during the test. Unused portions were stored in a freezer.

C. **Dosage:** Twenty-one-day, flow-through, toxicity test. Based on a preliminary test, five nominal concentrations (0.06, 0.12, 0.25, 0.50, and 1.0 mg a.i./l), a dilution water control, and a solvent control (0.05 ml/l) were selected for the test.

D. **Design:** Four chambers were used for each concentration with ten randomly-placed daphnids per chamber. The loading was approximately 1 daphnid per 100 ml of solution. All chambers were observed daily for mortality, abnormal effects, and the release of the first brood. Young were counted every Monday, Wednesday, and Friday by removing the adult with a smooth glass pipet and pouring the test solution through a 50-mesh stainless steel screen. The collected young were placed in sample jars, counted, and discarded. The solution was collected and replaced along with the adult daphnids back into the chamber. The test chambers were cleaned on each counting day. At test termination, the daphnids were measured using a binocular dissecting scope and eyepiece micrometer.

The daphnids were uniformly fed an algal suspension (*Selenastrum capricornutum* and *Ankistrodesmus falcatus*) providing at least 4×10^8 cells/l to each replicate. Each replicate was also supplemented twice daily with 1 ml of a trout chow/yeast suspension (2.5 mg solids/ml) giving a final suspended solids concentration of 5 mg/l.

The dissolved oxygen concentration (DO), temperature, and pH were measured in alternating, duplicate replicates of the dilution water control, solvent control, low, middle, and high concentrations on days 0, 3, 7, 14, and 21. The temperature of the water bath was recorded continuously with a data logger. The temperature, hardness, DO, pH, alkalinity, and conductivity of the dilution water were determined daily.

Measured concentrations of RH-7592 were determined using high performance liquid chromatography. Water samples were collected on days 0, 3, 7, 14, and 21.

E. **Statistics:** Daphnid survival, growth (length), and reproduction (time to first brood and young/adult reproductive days) were analyzed statistically.

3

Survival was analyzed using frequency analysis to compare the concentrations to the control and a one-tailed Fisher's Exact test and the Chi-Square statistic to determine which test concentrations exhibited a response significantly less than the control. Reproduction data were compared using Dunnett's test to determine exposure levels significantly different from the control. Daphnid length data were tested for normal distribution (Shapiro-Wilk's). One-way analysis of variance (ANOVA) and Dunnett's test were used to determine significant differences from the controls. The level of significance in all tests was P≤0.05. The dilution water control and solvent control data were pooled when comparison by t-test indicated no significant difference. The 21-day EC_{50} was calculated using a computer program developed by Stephan et al. (1978).

12. **REPORTED RESULTS:** A water pump malfunction occurring on days 2 and 3 caused the turnover rates in the aquaria to fall to 4.8 and 3.7 per day, respectively. The mean measured concentrations were 0.078, 0.15, 0.34, 0.57, and 1.2 mg a.i./l (Table 2, attached). These values averaged 125 ±8.5% of nominal concentrations. There was no noticeable precipitate in the mixing box, test beakers, or stock solution during the test.

Survival of daphnids in the four highest concentrations (0.15-1.2 mg a.i./l) was significantly affected compared to the pooled controls (Table 4, attached). Survival in the control and solvent control averaged 87.5 and 77%, respectively. The authors explained that solvent control survival was below the acceptable criterion set in the study protocol but was above the limit (70%) given in the SEP (1986). The 21-day EC_{50}, based on immobilization, was 0.10 mg a.i./l (95% C.I. = 0.094-0.11 mg a.i./l) using the moving average method.

The number of days to first brood release for the controls and 0.078 and 0.15 mg a.i./l test concentrations was 7 (Table 5, attached). The number of days until first brood release at 0.34 mg a.i./l was 9 and was significantly increased compared to pooled control data. No neonates were released in the two highest concentrations. Dilution water control and solvent control reproduction averaged 9.48 and 11.05 young per adult reproductive day, respectively. Reproduction was significantly reduced at 0.15 and 0.34 mg a.i./l when compared to the solvent control. All young produced during the study appeared normal.

4

Adult daphnid lengths at 0.15 and 0.34 mg a.i./l were significantly lower than those of the pooled controls (Table 4, attached). There was 100% mortality at the two highest test concentrations so no length data were available for these levels.

The results of water quality monitoring were presented in Table 6 (attached). The pH of the test solutions ranged from 8.1 to 8.4. Dissolved oxygen saturation ranged from 77 to 104% at 22 and 21°C, respectively. The temperature of the test solutions at the daily recordings was 20-22°C during the study.

13. **STUDY AUTHOR'S CONCLUSIONS/QUALITY ASSURANCE MEASURES:**
The maximum acceptable toxicant concentration (MATC) limits were estimated to be >0.078 and <0.15 mg a.i./l (mean measured concentrations) resulting in a geometric mean MATC of 0.108 mg a.i./l.

Quality Assurance and GLP Compliance Statements were included in the report indicating adherence to USEPA GLP Regulations (40 CFR 160).

14. **REVIEWER'S DISCUSSION AND INTERPRETATION OF STUDY RESULTS:**

   A. **Test Procedure:** Since an SEP for conducting daphnid flow-through chronic tests are not available at the present time, ASTM guidelines were used in the data validation process. The test procedures were generally in accordance with the ASTM (1992), but deviated as follows:

   Dry weight is the appropriate growth measure rather than length measurements. The authors used length as the growth endpoint in this test.

   At least once during the test, the hardness, alkalinity, and conductivity of the highest test concentration should have been measured.

   B. **Statistical Analysis:** Survival after 21 days was analyzed using one-way ANOVA and Dunnett's test (Toxstat Version 3.3). Survival at 0.15 and 0.34 mg a.i./l was significantly lower than survival in the solvent control (see attached printout 1). No daphnids survived to test termination in the two highest concentrations. Solvent control survival was significantly lower than dilution water control survival. The 21-day EC_{50} was determined using EPA's

5

Toxanal program. The results were the same as the authors' (see attached printout 2).

The reviewer used Williams' test (Toxstat Version 3.3) to analyze the average number of young produced per adult reproductive day after 21 days. Reproduction was not affected by the concentrations of RH-7592 <0.15 mg a.i./l (see attached printout 3). Dilution water control reproduction was significantly lower than solvent control reproduction. The number of days to first brood release was not analyzed by the reviewer.

One-hundred percent mortality occurred in several replicates of the two highest concentrations. Therefore, adult daphnid length was analyzed using one-way ANOVA (Crunch Version 3) and Bonferroni's test rather than two-way ANOVA. Length was significantly reduced at 0.15 and 0.34 mg a.i./l (see attached printout 4). There was no statistical difference between dilution water control and solvent control lengths.

C. **Discussion/Results:** This study is scientifically sound but does not meet the guideline requirements for a chronic, flow-through toxicity test using the freshwater invertebrate, *Daphnia magna*. This study only measured length for an estimate of growth. Length is not a good predictor of arthropod growth due to the characteristics of arthropod moult, a more appropriate measurement would have been to use dry weight. A repeat study is not required, even though the study is supplemental it is acceptable for the purpose of a risk assessment. The 21-day EC_{50} was 0.10 mg a.i./l mean measured concentration. The MATC was >0.078 and <0.15 mg a.i./l (geometric mean MATC = 0.11 mg a.i./l).

D. **Adequacy of the Study:**

   (1) **Classification:** Supplemental.

   (2) **Rationale:** Dry weight should have been measured instead of length to determine growth.

   (3) **Repairability:** N/A.

15. **COMPLETION OF ONE-LINER FOR STUDY:** Yes, 11-30-92.

REFERENCES: ASTM. 1992. Proposed Standard Guide for Conducting *Daphnia magna* Chronic Toxicity Tests in a Flow-Through System. Draft No. 5.

RIN 347795

EEB FENBUCONAZOLE REVIEW

Page_____ is not included in this copy.

Pages __8__ through __11__ are not included.

The material not included contains the following type of information:

____ Identity of product inert ingredients.

____ Identity of product impurities.

____ Description of the product manufacturing process.

____ Description of quality control procedures.

____ Identity of the source of product ingredients.

____ Sales or other commercial/financial information.

____ A draft product label.

____ The product confidential statement of formula.

____ Information about a pending registration action.

✓ FIFRA registration data.

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____ The document is not responsive to the request.

The information not included is generally considered confidential by product registrants. If you have any questions, please contact the individual who prepared the response to your request.

418750-07, RH-7592, daphnid survival after 21 days
File: a:41875007.dt1   Transform: ARC SINE(SQUARE ROOT(Y))

Shapiro Wilks test for normality

D =   0.182
W =   0.949
Critical W (P = 0.05) (n = 20) = 0.905
Critical W (P = 0.01) (n = 20) = 0.868

Data PASS normality test at P=0.01 level. Continue analysis.

Bartletts test for homogeneity of variance

Calculated B statistic =   3.32
Table Chi-square value =   13.28 (alpha = 0.01)
Table Chi-square value =   9.49 (alpha = 0.05)
Average df used in calculation ==>   df (avg n - 1) =   3.00
Used for Chi-square table value ==>   df (#groups-1) =   4

Data PASS homogeneity test at 0.01 level. Continue analysis.

          t-test of Solvent and Blank Controls   Ho:GRP1 MEAN = GRP2 MEAN

  GRP1 (SOLVENT CRTL) MEAN =   1.0492   CALCULATED t VALUE =   -3.3705
  GRP2 (BLANK CRTL) MEAN   =   1.2136   DEGREES OF FREEDOM =   6
  DIFFERENCE IN MEANS   =   -0.1644

TABLE t VALUE (0.05 (2), 6) = 2.447**   SIGNIFICANT DIFFERENCE at alpha=0.05
TABLE t VALUE (0.01 (2), 6) = 3.707   NO significant difference at alpha=0.01

                              ANOVA TABLE

SOURCE   DF   SS   MS   F

Between   4   3.584   0.896   74.009
Within (Error)   15   0.182   0.012

Total   19   3.765

   Critical F value =   3.06 (0.05,4,15)
   Since F > Critical F REJECT Ho:All groups equal

     DUNNETTS TEST   -   TABLE 1 OF 2   Ho:Control<Treatment

                         TRANSFORMED   MEAN CALCULATED IN
GROUP   IDENTIFICATION   MEAN   ORIGINAL UNITS   T STAT SIG
----- ----------------   ----------- ------------------ ------ ---
  1   solvent control   1.049   0.750
  2   dilution contrl   1.214   0.875   -2.113
  3   0.078   1.178   0.850   -1.657
  4   0.15   0.235   0.050   10.465 *
  5   0.34   0.352   0.125   8.962 *

Dunnett table value = 2.36   (1 Tailed Value, P=0.05, df=15,4)

     DUNNETTS TEST   -   TABLE 2 OF 2   Ho:Control<Treatment

                         NUM OF Minimum Sig Diff % of   DIFFERENCE
GROUP   IDENTIFICATION   REPS   (IN ORIG. UNITS) CONTROL FROM CONTROL
----- ---------------- ------- ---------------- ------- ------------
  1   solvent control   4
  2   dilution contrl   4   0.172   22.9   -0.125
  3   0.078   4   0.172   22.9   -0.100
  4   0.15   4   0.172   22.9   0.700
  5   0.34   4   0.172   22.9   0.625

NOTE: BECAUSE THERE WAS CONTROL MORTALITY, AND NONE
OF THE LOWER CONCENTRATIONS PRODUCED ZERO MORTALITY,
THE DATA HAS BEEN SUBJECTED TO ABBOTT'S CORRECTION.

RIFICI RH-7592 DAPHNIA MAGNA 11-30-92
****

CONC.	NUMBER EXPOSED	NUMBER DEAD	PERCENT DEAD	BINOMIAL PROB.(PERCENT)
1.2	30.76923	30.76923	100	4.656613E-08
.57	30.76923	30.76923	100	4.656613E-08
.34	30.76923	25.76923	83.75	9.609761E-03
.15	30.76923	28.76923	93.5	2.314337E-05
.078	40	6	15	0

BECAUSE THE NUMBER OF ORGANISMS USED WAS SO LARGE, THE 95 PERCENT
CONFIDENCE INTERVALS CALCULATED FROM THE BINOMIAL PROBABILITY ARE
UNRELIABLE. USE THE INTERVALS CALCULATED BY THE OTHER TESTS.

AN APPROXIMATE LC50 FOR THIS SET OF DATA IS .103201

RESULTS CALCULATED USING THE MOVING AVERAGE METHOD

SPAN	G	LC50	95 PERCENT CONFIDENCE LIMITS
1	7.051465E-02	.103201	9.434739E-02 - 0.1128009

.1128009

LMR 11/30/92

RESULTS CALCULATED USING THE PROBIT METHOD

ITERATIONS	G	H	GOODNESS OF FIT PROBABILITY
6	1.856116	7.298115	0

A PROBABILITY OF 0 MEANS THAT IT IS LESS THAN 0.001.

SINCE THE PROBABILITY IS LESS THAN 0.05, RESULTS CALCULATED
USING THE PROBIT METHOD PROBABLY SHOULD NOT BE USED.

SLOPE   =   3.524496
95 PERCENT CONFIDENCE LIMITS =-1.277255   AND   8.326246

LC50 =   .1173972
95 PERCENT CONFIDENCE LIMITS = 0 AND +INFINITY

LC10 =   5.120617E-02
95 PERCENT CONFIDENCE LIMITS = 0 AND .1161218

13

418750-07, RH-7592, daphnid young/reproductive day
File: a:41875007.dt2   Transform: NO TRANSFORMATION

Shapiro Wilks test for normality

D =   9.793
W =   0.978
Critical W (P = 0.05) (n = 20) = 0.905
Critical W (P = 0.01) (n = 20) = 0.868

Data PASS normality test at P=0.01 level. Continue analysis.

Bartletts test for homogeneity of variance

Calculated B statistic =   3.59
Table Chi-square value =   13.28   (alpha = 0.01)
Table Chi-square value =   9.49   (alpha = 0.05)
Average df used in calculation ==>   df (avg n - 1) =   3.00
Used for Chi-square table value ==>   df (#groups-1) =   4

Data PASS homogeneity test at 0.01 level. Continue analysis.

        t-test of Solvent and Blank Controls   Ho:GRP1 MEAN = GRP2 MEAN

 GRP1 (SOLVENT CRTL) MEAN =   11.0500   CALCULATED t VALUE =   2.6823
 GRP2 (BLANK CRTL) MEAN   =   9.4750   DEGREES OF FREEDOM =   6
 DIFFERENCE IN MEANS   =   1.5750

TABLE t VALUE (0.05 (2), 6) = 2.447**   SIGNIFICANT DIFFERENCE at alpha=0.05
TABLE t VALUE (0.01 (2), 6) = 3.707   NO significant difference at alpha=0.01

        WILLIAMS TEST (Isotonic regression model)   TABLE 1 OF 2

GROUP   ORIGINAL   TRANSFORMED   ISOTONIZED
        IDENTIFICATION   N   MEAN   MEAN   MEAN
------ --------------   --- ----------   -----------   -----------
  1   solvent control 4   11.050   11.050   11.050
  2   dilution contrl 4   9.475   9.475   10.350
  3   0.078   4   11.225   11.225   10.350
  4   0.15   4   5.300   5.300   5.513
  5   0.34   4   5.725   5.725   5.513

                   ISOTONIZED   CALC.   SIG   TABLE   DEGREES OF
    IDENTIFICATION   MEAN   WILLIAMS P=.05 WILLIAMS   FREEDOM
------------------ ----------- --------- ----- --------- -------------
    solvent control 11.050
    dilution contrl 10.350   1.225   1.75   k= 1, v=15
            0.078   10.350   1.225   1.84   k= 2, v=15
            0.15   5.513   9.692   *   1.87   k= 3, v=15
            0.34   5.513   9.692   *   1.88   k= 4, v=15
----
s =   0.808
Note: df used for table values are approximate when v > 20.

Analysis of Variance   File: rh   Date: 11-30-1992

N's, means and standard deviations based on dependent variable: LENGTH
 * Indicates statistics are collapsed over this factor

Factors: T	N	Mean	S.D.
*	106	4.3425	0.2445
1	30	4.4083	0.1876
2	35	4.4143	0.1678
3	34	4.3294	0.1523
4	2	3.8750	0.7425
5	5	3.7200	0.2706

Fmax for testing homogeneity of between subjects variances: 23.76
Number of variances= 5   df per variance=   5.

Analysis of Variance   Dependent variable: LENGTH

Source	df	SS (H)	MSS	F	P
Between Subjects	105	6.2790			
T (TRT)	4	2.6909	0.6727	18.936	0.0000
Subj w Groups	101	3.5881	0.0355		

Post-hoc tests for factor T (TRT)

Level	Mean	
1	4.408	Solvent control
2	4.414	dilution water control
3	4.329	0.078 mg/l
4	3.875	0.15
5	3.720	0.34

Comparison	Bon-ferroni	Dunnett
1 < 2		
1 > 3		
1 > 4	0.0020	0.0100
1 > 5	0.0000	0.0100
2 > 3		N.A.
2 > 4	0.0016	N.A.
2 > 5	0.0000	N.A.
3 > 4	0.0130	N.A.
3 > 5	0.0000	N.A.
4 > 5		N.A.

       For Dunnett's test only the P-values .05 and .01 are possible
       and only for comparisons with the control mean (level 1).

15

TITLE: 418750-07, RH-7592, daphnid survival after 21 days
FILE: a:41875007.dt1
TRANSFORM: ARC SINE(SQUARE ROOT(Y))   NUMBER OF GROUPS: 5

GRP	IDENTIFICATION	REP	VALUE	TRANS VALUE
1	solvent control	1	0.7000	0.9912
1	solvent control	2	0.7000	0.9912
1	solvent control	3	0.8000	1.1071
1	solvent control	4	0.8000	1.1071
2	dilution contrl	1	0.9000	1.2490
2	dilution contrl	2	0.9000	1.2490
2	dilution contrl	3	0.9000	1.2490
2	dilution contrl	4	0.8000	1.1071
3	0.078	1	0.8000	1.1071
3	0.078	2	0.8000	1.1071
3	0.078	3	0.9000	1.2490
3	0.078	4	0.9000	1.2490
4	0.15	1	0.0000	0.1588
4	0.15	2	0.0000	0.1588
4	0.15	3	0.0000	0.1588
4	0.15	4	0.2000	0.4636
5	0.34	1	0.2000	0.4636
5	0.34	2	0.2000	0.4636
5	0.34	3	0.0000	0.1588
5	0.34	4	0.1000	0.3218

TITLE: 418750-07, RH-7592, daphnid young/reproductive day
FILE: a:41875007.dt2
TRANSFORM: NO TRANSFORMATION   NUMBER OF GROUPS: 5

GRP	IDENTIFICATION	REP	VALUE	TRANS VALUE
1	solvent control	1	11.9000	11.9000
1	solvent control	2	11.8000	11.8000
1	solvent control	3	10.6000	10.6000
1	solvent control	4	9.9000	9.9000
2	dilution contrl	1	10.3000	10.3000
2	dilution contrl	2	8.8000	8.8000
2	dilution contrl	3	9.7000	9.7000
2	dilution contrl	4	9.1000	9.1000
3	0.078	1	10.8000	10.8000
3	0.078	2	11.1000	11.1000
3	0.078	3	11.7000	11.7000
3	0.078	4	11.3000	11.3000
4	0.15	1	4.5000	4.5000
4	0.15	2	5.4000	5.4000
4	0.15	3	6.0000	6.0000
4	0.15	4	5.3000	5.3000
5	0.34	1	4.5000	4.5000
5	0.34	2	5.4000	5.4000
5	0.34	3	7.3000	7.3000
5	0.34	4	5.7000	5.7000

16

Data listing   File: rh   Date: 11-30-1992

FILTER: None

Obs.	TRT	REP	LENGTH
1	1	1	4.55
2	1	1	4.55
3	1	1	4.60
4	1	1	4.25
5	1	1	4.40
6	1	1	4.45
7	1	1	4.35
8	1	2	4.10
9	1	2	4.65
10	1	2	4.55
11	1	2	4.65
12	1	2	4.50
13	1	2	4.55
14	1	2	4.25
15	1	3	4.65
16	1	3	4.50
17	1	3	4.60
18	1	3	4.50
19	1	3	4.40
20	1	3	4.05
21	1	3	4.65
22	1	3	4.25
23	1	4	4.15
24	1	4	4.40
25	1	4	4.10
26	1	4	4.25
27	1	4	4.30
28	1	4	4.25
29	1	4	4.60
30	1	4	4.20
31	2	1	4.60
32	2	1	4.50
33	2	1	4.45
34	2	1	4.60
35	2	1	4.60
36	2	1	4.55
37	2	1	4.10
38	2	1	4.65
39	2	1	4.50
40	2	2	4.15
41	2	2	4.50
42	2	2	4.40
43	2	2	4.45
44	2	2	4.20
45	2	2	4.10
46	2	2	4.55
47	2	2	4.40
48	2	2	4.60
49	2	3	4.40
50	2	3	4.50
51	2	3	4.30
52	2	3	4.55
53	2	3	4.40
54	2	3	4.25
55	2	3	4.45
56	2	3	4.20
57	2	3	4.40
58	2	4	4.35
59	2	4	4.05
60	2	4	4.45
61	2	4	4.25
62	2	4	4.65
63	2	4	4.50
64	2	4	4.60

17

65	2	4	4.30
66	3	1	4.30
67	3	1	4.50
68	3	1	4.05
69	3	1	4.45
70	3	1	4.50
71	3	1	4.35
72	3	1	4.25
73	3	1	4.30
74	3	2	4.35
75	3	2	4.30
76	3	2	4.25
77	3	2	4.05
78	3	2	4.50
79	3	2	4.40
80	3	2	4.20
81	3	2	4.50
82	3	3	4.50
83	3	3	4.55
84	3	3	4.25
85	3	3	4.00
86	3	3	4.35
87	3	3	4.30
88	3	3	4.45
89	3	3	4.15
90	3	3	4.55
91	3	4	4.20
92	3	4	4.25
93	3	4	4.40
94	3	4	4.55
95	3	4	4.25
96	3	4	4.15
97	3	4	4.25
98	3	4	4.50
99	3	4	4.30
100	4	3	3.35
101	4	3	4.40
102	5	1	3.40
103	5	1	3.90
104	5	3	3.90
105	5	4	3.95
106	5	4	3.45

18

DATABASE ENTRY FORM
FOR ACUTE OR CHRONIC TOXICITY STUDIES

1. **Chemical** _RH-7592_   **Shaughnessy** _129011_

2. **Common Name Of Organism Tested** _Daphnid_

3. **Scientific Name** _Daphnia magna_

4. **Age Of Organisms** _<24 hrs. at initiation_

5. **Guideline No.** _72-4_

6. **Type Of Dosing Method (Circle One) Or Study**

    1. Oral   2. Dietary   3. Reproduction   4. Static
    5. Static Renewal   (6. Flowthrough)   7. Acute Contact
    8. Other _____

7. **% AI Of Test Substance** _96.7_

8. **Study Duration (Hrs Or Days)** _21-d_

9. **Dose Type (Circle One)**   A. LD50   B. LC50   C. EC50   (D. MATC)

10. **Toxicity Level**   A. mg/kg   B. ppm   (C. mg/l)   D. μg/l   E. ng/l
               F. μg/bee   G. Other

11. **95% C.L.s** _21-day EC_{50} = 0.10 mg ai/l (95% CI = 0.094-0.11)_

12. **Curve Slope** _N/A_

13. **NOEL** _0.078_   ~~AA~~ _LOEC = 0.15_

14. **Study Date (YEAR)** _1991_

15. **Study Review Date (YEAR)** _1992_

16. **Category (Circle One)**   (CORE)   SUPPLEMENTAL   INVALID

17. **MRID of Accession Number** _418750-07_

18. **Laboratory** _ABC Laboratories Inc._

19. **Reviewer** _L. Rifici_

20. **For Reproductive Studies (avian or aquatic) Indicate Which Parameter Affected At What Toxicity Level.**

    Eggs Layed _____ % Cracked _____ % Viable _____
    % Live Embryos _____ % Egghatch _____ 14D Survivors _____
    Growth Effected at _0.15_   Other Effects _on Reproduction + Survival_