

AR226-3298

480

TRADE SECRET*Study Title*

H-24678: Early Life-Stage Toxicity to Rainbow Trout, *Oncorhynchus mykiss*

TEST GUIDELINES: U.S. EPA OPPTS, 850.1400 (1996)

U.S. EPA TSCA EG-11 (1982)

OECD TG 210 (1992)

AUTHOR: Robert A. Hoke, Ph.D.

STUDY COMPLETED ON: September 5, 2003

PERFORMING LABORATORY: E.I. du Pont de Nemours and Company
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LABORATORY PROJECT ID: DuPont-11603

WORK REQUEST NUMBER: [REDACTED]

SERVICE CODE NUMBER: [REDACTED]

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GOOD LABORATORY PRACTICE COMPLIANCE STATEMENT

This study was conducted in compliance with U.S. EPA TSCA (40 CFR part 792) Good Laboratory Practice Standards, which are consistent with the OECD Principles of Good Laboratory Practice (as revised in 1997) published in ENV/MC/CHEM(98)17 and MAFF Japan Good Laboratory Practice Standards (59 NohSan Number 3850) except for the item documented below. The item listed does not impact the validity of the study.

Test substance characterization and stability analyses were performed at Regional Analytical Service (RAS), Deepwater, New Jersey. None of the aforementioned analyses were performed under Good Laboratory Practice Standards; however, the analyses were conducted in compliance with ISO9002 regulations. All of the analyses are considered sufficient for the purposes of this study.

Applicant / Sponsor: E.I. du Pont de Nemours and Company
Wilmington, Delaware 19898
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Study Director: _____

Robert A. Hoke

Robert A. Hoke, Ph.D.

Senior Research Ecotoxicologist and Manager

5 Sept 2003
Date

Applicant / Sponsor: _____

DuPont Representative

_____ Date

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QUALITY ASSURANCE STATEMENT

Haskell Sample Number(s):

24678

Dates of Inspections:

Protocol: October 29, 2002

Conduct: February 14,21, 2003; March 5,6, 2003; May 15, 2003

Records, Reports: August 11-15, 2003

Dates Findings Reported to:

Reported by:

Wanda K. Kelly for MTF
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05-Sep-2003
Date

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CERTIFICATION

We, the undersigned, declare that this report provides an accurate evaluation of data obtained from this study.

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STUDY INFORMATION

Substance Tested: [REDACTED]

Synonyms/Codes: • [REDACTED]
• H-24678
• [REDACTED]

Haskell Number: 24678

Composition: [REDACTED]

[REDACTED]
Known Impurities: [REDACTED]
[REDACTED]

Physical Characteristics: [REDACTED]

Stability: The test substance appeared to be stable under the conditions of the study; no evidence of instability was observed.

Sponsor: E.I. du Pont de Nemours and Company
Wilmington, Delaware 19898
U.S.A.

Study Initiated/Completed: October 29, 2002 / (see report cover page)

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STUDY PERSONNEL

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SUMMARY

GUIDELINES: The effect of H-24678 (purity 100%) on hatching, growth and survival of rainbow trout, *Oncorhynchus mykiss*, embryos, alevins, and fingerlings was assessed in a flow-through, 90-day early life-stage toxicity test in accordance with the appropriate Good Laboratory Practice standards and test guidelines (U.S. EPA TSCA EG-11; U.S. EPA OPPTS 850.1400, OECD 210).

NOMINAL TEST

CONCENTRATIONS: 0.63, 1.3, 2.5, 5, and 10 mg/L H-24678, dilution water control, isopropyl alcohol (IPA) control

MEASURED TEST

CONCENTRATIONS: 0.75, 1.3, 2.8, 5.6, and 10 mg/L H-24678 with [REDACTED] none detected in dilution water and IPA controls (LOD, 0.0022 mg/L)

0.54, 1.0, 2.1, 4.5, and 10 mg/L H-24678 with [REDACTED] none detected in dilution water and IPA controls (LOD, 0.059 mg/L)

0.63, 1.3, 2.7, 5.0, and 11 mg/L H-24678 with [REDACTED] none detected in dilution water and IPA controls (LOD, 0.042 mg/L)

AGE OF TEST

ORGANISMS: Approximately 22.5 hours post-fertilization at test start

SOURCE OF

TEST ORGANISMS: Unfertilized eggs and sperm (collected from 3 female and 1 male brood fish) were obtained from Troutlodge Inc., (Sumner, Washington)

TEST DESIGN: A total of 80 embryos were exposed per concentration (20 embryos per embryo cup, 2 cups per replicate, 2 replicates per concentration) at test start. On day 45, after swim-up had begun in the dilution water control, the fingerlings were thinned to a total of 30 fish per concentration (15 fish per replicate, 2 replicates per concentration). Analytical verification of H-24678 concentrations was made on test solutions sampled on day -1, day 0, once weekly, and on day 90 at test end. Additional samples were submitted for analysis as warranted.

Test solutions were supplied to each replicate test chamber by a continuous flow metering system at a rate of approximately 7.5 L per hour (approximately 24, 7.5-L test solution volume additions per day).

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Embryos and alevins were held in relative darkness until day 39 and then held under a photoperiod of 16 hours light and 8 hours darkness (which included 30 minutes of transitional light between light and dark intervals) for the remainder of the study. After thinning, the fingerlings were fed newly-hatched brine shrimp (days 45-54) or newly-hatched brine shrimp and trout chow (days 55-89). Test solutions were maintained between 11.0 and 11.7°C (mean 11.4°C). Observations were made for assessment of number of dead eggs, first and last day of hatching, first day of swim-up, survival and abnormalities from hatching to thinning, and survival and abnormalities from thinning to test end. Standard length and blotted wet weight of surviving fingerlings were determined at test end.

CONCLUSION: The NOEC (No Observable Effect Concentration) for H-24678 in a 90-day early life-stage toxicity study using Rainbow trout, *Oncorhynchus mykiss*, was 2.5 mg/L based on nominal H-24678 concentrations and egg hatching. The LOEC (lowest observed effect concentration) and MATC (maximum acceptable toxicant concentration), for the same endpoint were 5 and 3.5 mg/L, respectively.

STUDY

COMPLETION: (see report cover page)

INTRODUCTION

The purpose of this study was to assess the early life-stage toxicity of H-24678 to embryos, alevins, and fingerlings of rainbow trout, *Oncorhynchus mykiss*, in a flow-through, 90-day test.

MATERIALS AND METHODS

A. Test Guidelines

Except as noted below, the study design complies with the following test guidelines:

- U.S. Environmental Protection Agency (EPA) (1982). TSCA EG-11, Fish Early Life-Stage Toxicity Test.⁽¹⁾
- U.S. Environmental Protection Agency (EPA) (1996). OPPTS 850.1400, Fish Early-Life Stage Toxicity Test.⁽²⁾
- Organisation for Economic Co-Operation and Development (OECD) (1992). TG 210. Fish Early-Life Stage Toxicity Test.⁽³⁾
- A constant test target temperature of $10 \pm 2^\circ\text{C}$ was used for the duration of the test, not $10 \pm 2^\circ\text{C}$ for embryonic development and $12 \pm 2^\circ\text{C}$ for alevin and fingerling development (OECD 210). Based on the use of existing temperature control equipment, which is typical of that used in most facilities for fish early life-stage studies, the high probability of exceeding the guideline limit for temperature variation obviated temperature adjustment in the middle of the study.

This exception did not affect the objectives or the validity of the study.

B. Test Substance

The test substance, H-24678, was supplied by the sponsor as an [REDACTED] H-24678 contains a [REDACTED]

The Certificate of Analysis (COA) for the test substance expired prior to the initiation of the study. However, prior to study initiation the study sponsor provided a letter indicating that the test substance was acceptable for study use and was stable for a greater period of time than indicated on the COA. In addition, the stability of H-24678 in HLWW under test conditions was verified based on the analytical recoveries of the target analytes.

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A master stock solution (Stock A) was prepared at a concentration of approximately 100 mg/mL H-24678 in a 1:4 solution of isopropyl alcohol:HLWW. Secondary stock solutions were prepared by adding predetermined volumes of Stock A to 500 mL volumetric flasks and bringing the final volume to 500 mL with 100 mL of isopropyl alcohol and the appropriate remaining volume of HLWW. All stock solutions were prepared on a weekly basis throughout the study. The nominal IPA co-solvent concentration used during the test in any test substance or control solution did not exceed 0.1 mL/L. At test start, the stock solutions were clear with a yellow tint with no visible precipitate. Test solutions were clear and colorless with no visible precipitate at test start. A precipitate appeared in the test solutions on day 3 (nominal 5, 10 mg/L), day 7 (nominal 2.5 mg/L), day 13 (nominal 1.3 mg/L) and day 19 (nominal 0.63 mg/L) that was present for the remainder of the study. The total amount of H-24678 used in the definitive study was approximately 1418 grams.

C. Dilution Water

Dilution water originated from the Haskell Laboratory well which is 378-feet deep and is cased and sealed to bedrock. The hardness of the HLWW is adjusted to approximately 100-140 mg/L as CaCO_3 by the flow-proportioned addition of CaCl_2 . The HLWW is then aerated, passed through a green sand filter to remove iron, and filtered through 50-, 10-, and 0.45- μm cartridge filters to remove particulates. The water is heated or chilled as appropriate and distributed through aged polyvinyl chloride piping. The dilution water is analyzed twice yearly for major anions and cations, metals, total organochlorine and organophosphate pesticides, and polychlorinated biphenyls (Table 1). The dilution water meets OECD⁽³⁾ and ASTM⁽⁴⁾ criteria and specifications.

D. Test Organism Culture

Rainbow trout, *Oncorhynchus mykiss*, unfertilized eggs and sperm were purchased from Troutlodge, Inc., Sumner, Washington. Eggs and sperm (collected from 3 female and 1 male brood fish) were received in separate plastic bags which were kept on ice (approximately 3.1°C) during shipping. Eggs and sperm were allowed to equilibrate to approximately 11.5°C in a water bath. Approximately 200 mL of the buffer solution containing glycine, TRIS, and sodium chloride was added to the bag containing the eggs. The purpose of the buffer was to remove any ovarian fluid that could impede fertilization. The bag was placed back into the water bath for approximately 15 minutes. The bag of eggs was taken out of the water bath and the buffer solution was removed. The bag of sperm was removed from the water bath and its contents were added to the bag of eggs. The bag was gently rocked back and forth to evenly distribute the sperm. Buffer solution (50 mL) was also added to the bag to help activate the sperm. The bag was again gently rocked back and forth and returned to the water bath for about 15 minutes. The embryos were removed from the waterbath and the buffer solution and sperm poured off of the embryos. The embryos were then rinsed with cold HLWW to remove residual sperm and other debris before being transferred to two stainless steel tanks, each containing 10 L of aerated HLWW, in a water bath (11.5-11.6°C) under darkness. Approximately 22.5 hours later, embryos were randomly placed into embryo cups to begin the test. The embryonic stage at the beginning

of exposure was verified by selecting a representative sample of fertilized eggs, photographing, and comparing with literature sources.⁽⁵⁾ Embryos and larvae were identified by labels on aquaria and test chambers.

E. Test Methods^(1,2,3)

Five test substance concentrations, a dilution water control, and an isopropyl alcohol (IPA) control were used in this study. Nominal test substance concentrations were 0.63, 1.3, 2.5, 5, and 10 mg/L. The concentration of IPA in all test solutions, with the exception of the dilution water control, was < 0.1 mL/L.

Test chambers (2 replicate chambers per concentration) were 13-L stainless steel aquaria (30 [length] x 14.5 [width] x 30 [height] cm), each holding approximately 7.5 liters of solution (16.5-cm liquid depth) and fitted with a screen mesh-covered overflow pipe. A recirculating waterbath was used to maintain temperature in the test chambers at $10 \pm 2^\circ\text{C}$. Test chambers were positioned in the waterbath using random numbers.

Test solutions were supplied to the test chambers under flow-through conditions by a continuous flow metering system. Metering system surfaces exposed to test solutions consisted of glass, Tygon[®], and Teflon[®]. The test substance metering system consisted of a Rainin Rabbit-Plus[™] peristaltic pump that delivered the stock solutions and IPA control continuously to the mixing chambers of the test system at approximately 1.5-2.1 mL per hour. Test solutions in the mixing chamber were stirred by a mini mixer. Test solutions were delivered continuously from the mixing chamber to each replicate test chamber at approximately 7.5 L per replicate per hour (approximately 24 test solution volume additions per day). Checks of the flow rate into each replicate chamber were made prior to test start and after test end.

Two 212-mL glass embryo cups (5.5-cm diameter) with screen mesh bottoms attached with silicone adhesive were suspended in each replicate. Twenty embryos were placed into each embryo cup (total of 40 embryos per replicate and 80 embryos per test concentration). Embryo cups were assigned to each replicate and embryos were assigned to embryo cups using random numbers. Embryo cups oscillated at approximately 4 rpm (2 to 7-cm water depth in embryo cup). Embryo cups were inspected daily and unfertilized eggs and damaged or fungus-infected embryos were removed. The criterion for embryo death was opaque appearance.

The surviving alevins and fingerlings were thinned to 15 per replicate using random numbers and released into the appropriate test chamber replicate on day 45 after swim-up had begun in the dilution water control. Fish that swim-up are those that occupy and are able to maintain their position in the top half of the water column and in which the yolk sac has mostly been resorbed. Test organisms thinned from the test chambers were humanely sacrificed with MS-222 and stored frozen for potential residue analysis at a later date. On day 45, feeding was initiated. The fingerlings were fed newly-hatched brine shrimp (*Artemia* sp., San Francisco Bay Brand, Newark, California) 3 times daily on weekdays and twice daily on weekends and holidays. On day 55 through day 89, one of the daily feedings with brine shrimp was replaced by a feeding with Aqua Max[®] Starter Fingerling 300 5D03 (PMI[®] Nutrition International, LLC). The

fingerlings were last fed on day 89 (am, trout chow only), approximately 24 hours prior to test conclusion on the following day. Brine shrimp and Aqua Max[®] are analyzed periodically to assure that contaminants are not present at levels that would be expected to affect the scientific integrity of a study. Uneaten food and/or debris were removed as needed. The number of live fingerlings was determined daily by actual count. The criteria for alevin and fingerling death were the absence of opercular movement and lack of reaction to gentle prodding. Surviving fingerlings were humanely sacrificed using MS-222 at test end and measurements made of length and blotted wet weight. In addition, 3 fish from each test chamber were frozen for potential residue analysis at a later date.

Diluter operation was checked twice daily. Test solution concentrations were verified by chemical analysis prior to beginning the test, at test start, weekly, and at test end. Before thinning, water samples were taken from a point between the 2 embryo cups in each replicate test chamber (2 samples per concentration plus back-up samples). After thinning, water samples were taken at mid-depth from each test chamber replicate (2 samples per concentration plus back-up samples). Test solutions were maintained between 11.0 and 11.7°C (mean = 11.4°C). The diluter was wrapped in black plastic to keep the embryos and alevins in relative darkness until the completion of hatching. The black plastic was removed from day 39 onwards. A photoperiod of 16 hours light (329 - 553 Lux) and 8 hours darkness, which included 30 minutes of transitional light (approximately 18 - 151 Lux) between the light and dark intervals, was used throughout the remainder of the study.

Dissolved oxygen, pH, and temperature were measured in both replicates of the dilution water control and all test concentrations at the beginning of the test before embryos were added, weekly, and at test end. A continuously-recording thermometer was used to check temperature variations in the test system. Total alkalinity, EDTA hardness, and conductivity were measured in the A replicate of the dilution water control, IPA control, and the highest test substance concentration with surviving test organisms at the beginning of the test, weekly, and at test end. Test solutions were not aerated during the study.

F. Sample Preparation and Chemical Analysis

1. Sample Collection and Treatment

Analytical determination of H-24678 concentrations in test solution samples was performed with samples collected from each replicate test chamber prior to test initiation, at test initiation, and weekly after test initiation until test termination. A primary sample plus a back-up sample was collected from each replicate test chamber of each control (dilution water control, isopropyl alcohol control) and test substance concentration. Aliquots from each of the primary samples were placed directly into an autosampler vial for analysis by LC/MS. The 5 mg/L and 10 mg/L samples were diluted before analysis with HLWW 1:2 and 1:4, respectively. The remaining primary sample solutions and backup samples were stored at room temperature.

2. Instrument and Conditions

HPLC Instrument: Model 2795, Waters
MS Instrument: Quattro Micro, Micromass (Day -1 to Day 7) and Waters
ZQ (Day 11 to Day 90)

LC Parameters:

Column: Luna 3u C18(2), 20 mm x 2mm
Mobile Phase: A- 50 mM ammonium acetate in water*
B- methanol

Gradient:

Time (min)	%B	Flow (mL/min)
0	30	0.25
5	100	0.25
10	100	0.25
10.1	30	0.50
12	30	0.50
12.1	30	0.25

* On several days of analysis addition of 0.1 % or 0.4 % triethylamine (v/v) to the 50 mM ammonium acetate was required in order to obtain acceptable peak shapes for the

[REDACTED]
Column Temperature: 30°C
Injection Volume: 50 µL
Column Switch: 2 and 10 min

MS Parameters:

Ionization mode: Electrospray, negative ions
Capillary voltage: 3.2 kV
Cone voltage: 30 V
Source Temperature: 120°C
Desolvation Temperature: 450°C

Data Acquisition Function: [REDACTED] SIR of 789 m/z; 0-10 min
[REDACTED] SIR of 485 m/z; 0-10 min
[REDACTED] SIR of 443 m/z; 0-10 min

3. Quantitation

H-24678 is a mixture of [REDACTED]

[REDACTED] One chemical species was selected from each group and monitored by LC/MS though the study. The selected species chemical structures, names, and abbreviations used were as follows:

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

The test substance H-24678 [REDACTED] was used as the reference compound. The test substance H-24678 has not been characterized to determine the actual contents of the three species that were monitored during the study. The concentrations of individual chemical species that were monitored during the study were represented as the total concentrations of the H-24678.

Stock solutions of the reference standard, H-24678 [REDACTED] were made by dissolving approximately 1 g of H-24678 in 2 mL isopropanol in a 10 mL volumetric flask, and bringing the volume to 10 mL with HLWW. Appropriate aliquots of the stock solution were diluted with dilution water (HLWW) to prepare calibration standard solutions with concentrations ranging from 0.258 to 5.25 mg/L. Dilution water was run as a zero (blank) calibration standard solution. Duplicate injections of test and calibration standard solutions were made and peak areas were determined electronically.

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The calibration standard curve was generated by regression analysis of the peak area data from chromatography of the calibration standard solutions. Data for test solutions were compared to the calibration standard curve to determine concentrations of each of the monitored compounds. The limit of detection (LOD) and limit of quantitation (LOQ) were determined by calculating the average noise level in chromatograms of the water and IPA control solutions and comparing them to the signal of a calibration standard of known concentration. Three chromatograms were examined for noise-related peaks near the retention time of the analyte. The LOD was calculated as 3 times the concentration equivalent of the mean noise level. The LOQ was calculated as 10 times the concentration equivalent of the mean noise level.

G. Statistical Analysis

Since there were two controls, water and IPA, for each endpoint, the two controls were compared using either the Mann-Whitney test or Fisher's Exact test. If there was no significant difference, the two controls were combined for all further analysis of that endpoint. If there was a significant difference between the two controls, then the dilution water control was dropped from analysis for that endpoint and all further analysis was done using the IPA control only.

The NOEC for each response was determined through the use of trend tests (Cochran-Armitage trend test or the Jonckheere trend test) wherever appropriate. These trend tests assume monotonicity in the concentration-response. Parametric, or if appropriate, non-parametric tests, were used to determine if there was significant departure from monotonicity. Other multiple comparison methods were used for non-monotone data.

Hatching, mortality and larval abnormality data were evaluated by the Cochran-Armitage test⁽⁶⁾ used in a step-down manner⁽⁷⁾ with equally-spaced concentration scores. If there was significant departure from monotonicity, then Fisher's exact test was used with a Bonferonni correction.⁽⁷⁾

Continuous or reproduction data (length, weight, first and last day of hatching, first day of swimup) were evaluated for normality using the Shapiro-Wilk test⁽⁸⁾ while homogeneity of variance was assessed by Levene's test.⁽⁹⁾ Data found to be both normal and homogenous were evaluated in the context of ANOVA.⁽⁷⁾ Monotonic concentration-response data were evaluated using the Jonckheere-Terpstra trend test.⁽¹⁰⁾ Non-monotonic concentration-response data were assessed using the Dunnett method⁽⁷⁾ if the data were normally distributed and homogeneous; using the Tamhane-Dunnett (or T3) method⁽⁷⁾ if the data were normally distributed but heterogeneous. If factors in addition to concentration were considered, such as the number of specimens in the test chamber at test start, then the Jonckheere test was not appropriate and multi-factor ANOVA was used for analysis. Non-normal data were analyzed by alternative methods.⁽⁹⁾ If possible, a transformation was found to obtain normality. Otherwise, a Kruskal-Wallis test⁽¹⁰⁾ replaced the ANOVA, Dunn's test⁽⁷⁾ replaced Dunnett's, and the Jonckheere-Terpstra test was still applicable, except as noted. Outliers were determined by the Tukey outlier rule and, if present, their effect on the conclusions was determined.

If massive ties were present in a continuous response, exact⁽¹¹⁾ permutation methods were used for data analysis. An exact version of the Kruskal-Wallis test was used, followed by exact

versions of Jonckheere-Terpstra or separate Mann-Whitney⁽¹⁰⁾ (or, equivalently, Wilcoxon) comparisons of each treatment group to the dilution water control, using a Bonferonni correction.

Wherever possible, determination of the EC₅₀ was done by probit analysis⁽⁶⁾ for all frequency responses, adjusting for dilution water control mortality. Where probit analysis failed, a moving-average angle or binary estimation procedure⁽¹²⁾ was used for analysis. Inverse regression⁽¹³⁾ was used to estimate the LC₅₀ for length and other continuous responses, if appropriate.

The No Observable Effect Concentration (NOEC) was defined as the highest measured concentration at or below which no statistically significant effect was observed. The Lowest Observed Effect Concentration (LOEC) was the lowest measured concentration at which a statistically significant effect occurred relative to the dilution water control. The maximum acceptable toxicant concentration (MATC) was defined as the geometric mean of the NOEC and LOEC.

RESULTS

A. Analytical Report

1. Chromatographic Results

[REDACTED] eluted as a well-resolved peak with a retention time of approximately 6.7 minutes. [REDACTED] eluted as a well-resolved peak with a retention time of approximately 5.8 minutes. [REDACTED] eluted as a well-resolved peak with a retention time of approximately 5.3 minutes. Figure 2 shows a representative calibration curve obtained for [REDACTED]. A chromatogram of a typical standard is shown in Figure 3. Figures 4, 5 and 6 show chromatograms of a dilution water control solution, IPA control solution, and test concentration solution, respectively.

The LOD and LOQ for the [REDACTED] were determined to be 0.0022 mg/L and 0.0072 mg/L of H-24678, respectively. The LOD and LOQ for the [REDACTED] were determined to be 0.059 mg/L and 0.20 mg/L of H-24678, respectively. The LOD and LOQ for the [REDACTED] were determined to be 0.042 mg/L and 0.14 mg/L of H-24678, respectively.

2. Test Solution Results

The mean, measured replicate concentrations of H-24678 for each monitored species and sampling day are shown in Table 2. Mean measured values of [REDACTED] ranged from 99 to 121% of the targeted nominal concentrations. Mean measured values of [REDACTED] ranged from 77 to 100% of the targeted nominal concentrations. Mean measured values of [REDACTED] ranged from 95 to 110% of the targeted nominal concentrations.

These data indicate that the H-24678 concentrations were maintained at acceptable levels throughout the definitive test.

Control solutions showed no detectable concentrations of H-24678 (Table 2).

B. In-Life Report

Selection of test concentrations for the 90-day trout early-life stage study were based on a previous study.⁽¹⁴⁾

Nominal H-24678 concentrations selected for the 90-day trout early life-stage study were 0.63, 1.3, 2.5, 5, and 10 mg/L. The corresponding mean, measured concentrations of H-24678 from [REDACTED] were 0.75, 1.3, 2.8, 5.6, and 10 mg/L. The corresponding mean, measured concentrations of H-24678 from [REDACTED] were 0.54, 1.0, 2.1, 4.5, and 10 mg/L. The corresponding mean, measured concentrations of H-24678 from [REDACTED] analyses were 0.63, 1.3, 2.7, 5.0, and 11 mg/L. A dilution water control and an IPA control were used in this study. The dilution water control solutions showed no detectable levels of H-24678.

Dilution water quality was acceptable based on OECD⁽⁴⁾ and ASTM⁽⁵⁾ dilution water criteria. Based on the most recent semi-annual dilution water analysis (Table 1), contaminant concentrations were below concentrations that could be expected to affect the integrity of a study. All chemical and physical parameters in the early life-stage study were within expected ranges (Tables 3 to 6). Temperature and pH of the test substance and dilution water control solutions ranged from 11.0 to 11.7°C (mean 11.4°C) and 7.1 to 7.7, respectively. Dissolved oxygen concentrations ranged between 8.1 and 10.9 mg/L (75 and 100% of air saturation based on an air saturation value of 10.8 mg/L at 12°C) over the duration of the study. The most recent analyses of brine shrimp and Aqua Max[®] indicated that total organochloride pesticides and PCBs were below concentrations that would be expected to affect the scientific integrity of the study.

On test day 87, a clog in the test solution delivery tube for replicate test chamber B of the nominal 10 mg/L test concentration resulted in the death of 12 of the 15 fish in this test chamber. The deaths were caused by the low dissolved oxygen concentration (1.8 mg/L) in this test chamber resulting from the lack of flow to the chamber and were not related to the effects of the test substance. The fact that this mortality was not related to the test substance exposure was confirmed by the survival of 15 of 15 fish through the end of the study (day 90) in the replicate A test chamber of the nominal 10 mg/L test concentration. Flow was re-established to the replicate B test chamber on day 87 and the remaining 3 live fish also survived through the end of the study. The length and blotted wet weight were measured for the 12 fish that died on day 87. These data were combined with the data for the 3 remaining fish that survived through the end of the study in all statistical analyses of survival, length, and wet weights.

A summary of hatching, swim-up, survival, and abnormalities from hatching to thinning is presented in Table 7. A summary of survival and abnormalities from thinning to test end, and mean length and wet weight (blotted dry) values at test end is presented in Table 8. Biological observations are presented in Tables 9 to 36. A photograph of a representative fertilized egg used to start the study is presented in Figure 1. Loadings in the A and B replicates of the dilution water control at the end of the test were 0.1093 and 0.1105 g fish per liter passing through each

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test chamber in 24 hours based on a daily turnover rate of 180 L or approximately 24, 7.5-L test solution volumes.

C. Statistical Analysis Report

The NOEC for number of dead eggs was 2.5 mg/L by the Cochran-Armitage trend test; no meaningful EC_{50} could be calculated for this endpoint.

Larval survival and abnormality NOECs were determined using Cochran-Armitage trend tests. The NOECs for larval survival from hatch to thinning and from thinning to test end exceeded the highest test concentration of 10 mg/L. Observed mortality at thinning was 4% or less in each dose group and no additional test substance-related mortality occurred between thinning and test end. The NOEC for presence of larval abnormalities at thinning exceeded 10 mg/L. The NOEC for presence of larval abnormalities at test end was 5 mg/L. No meaningful estimate of an EC_{50} could be obtained for these endpoints.

First and last day of hatching and first day of swimup exhibited massive ties (a large number of observations having the same value), and an exact analysis was conducted using StatXact. The first day of hatching and first day of swimup data displayed a monotone trend, so the NOEC was determined by an exact step-down Jonckheere-Terpstra trend test in each case. The NOECs for these two endpoints were greater than 10 mg/L. The last day of hatching displayed a significant lack of monotonicity so the NOEC of 10 mg/L was determined using multiple exact Mann-Whitney tests.

The step-down Jonckheere-Terpstra trend test determined the NOEC for length of surviving trout at test end to be 0.63 mg/L. If length was analyzed using Dunnett's test, the NOEC was greater than the highest test concentration of 10 mg/L. However, the Dunnett's test p -value for the 10 mg/L test concentration compared to the pooled control was only marginally greater than 0.05 ($p=0.0573$). The NOEC for weight at test end was 5 mg/L by the step-down Jonckheere-Terpstra trend test.

DISCUSSION

The mean measured concentrations of H-24678 were maintained at acceptable concentrations throughout the definitive study. The dilution water control and IPA control contained no detectable concentrations of H-24678.

The most sensitive endpoint during the study appeared to be length of surviving fish at the end of the study (NOEC = 0.63 mg/L) based on the results of the Jonckheere-Terpstra trend test. This test assumes monotonicity in the test data. A test for monotonicity indicated that the data met this assumption with a p value of 0.04. However, visual evaluation suggests that the length data are not truly monotonic since the mean lengths for the dilution water control, IPA control, and 0.63, 1.3, 2.5, 5, and 10 mg/L nominal H-24678 test concentrations, respectively, were 4.48, 4.34, 4.26, 4.36, and 4.17 centimeters. A more traditional statistical analysis of these data suggests that the NOEC for length was greater than 10 mg/L although the analysis of the effects at 10 mg/L just exceeded the 0.05 p value for significance with a p value of 0.0573.

Pooling of the control data (dilution water mean length = 4.54 cm, IPA = 4.42 cm) increased the power of the trend test analysis resulting in the NOEC for length of 0.63 mg/L as opposed to the results of Dunnett's test. Comparison of only the IPA control length versus the lengths from the test concentrations indicated the NOEC for length was greater than 10 mg/L. Based on this analysis, the presence of IPA in all test concentrations, and the observation that length in the 5 mg/L treatment did not fit a monotonic trend, the Jonckheere-Terpstra trend test NOEC for length is not truly reflective of the test data. The percent decrease in length, relative to the pooled control data, for the 0.63, 1.3, 2.5, 5, and 10 mg/L nominal H-24678 test concentrations was -3.2%, -4.9%, -4.9%, -2.8%, and -7.0%, respectively. The decrease in length, as a percent of the pooled control data, also seems of doubtful biological significance at nominal test concentrations below 10 mg/L H-24678.

The most biologically relevant endpoint for the study appears to be the NOEC of 2.5 mg/L for the number of dead eggs.

CONCLUSION

The NOEC (no observable effect concentration) for H-24678 in a 90-day early life-stage toxicity study using rainbow trout, *Oncorhynchus mykiss*, was 2.5 mg/L based on nominal H-24678 concentrations and number of dead eggs. The LOEC (lowest observed effect concentration) and MATC (maximum acceptable toxicant concentration), for the same endpoint were 5 and 3.5 mg/L, respectively.

RECORDS AND SAMPLE STORAGE

All data and records for analytical characterizations conducted by the sponsor will be retained by the sponsor.

Specimens (if applicable), raw data, and the final report will be retained at Haskell Laboratory, Newark, Delaware, or at Iron Mountain Records Management, Wilmington, Delaware.

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TABLES

TABLE 1
CHEMICAL CHARACTERISTICS OF HASKELL LABORATORY WELL WATER^a

Parameter	MDL ^b	Analytical Value	Parameter	MDL ^b	Analytical Value
BOD, mg/L	3.6	ND ^c	Lead, mg/L	0.0089	ND
COD, mg/L	1.7	ND	Magnesium, mg/L	0.0195	3.92
DOC, mg/L	0.6	0.55 ^d	Manganese, mg/L	0.0005	0.0037 J ^e
TOC, mg/L	0.5	0.691 J	MBAS/LAS, mg/L	0.035	ND
Total Kjeldahl N, mg/L	0.3	ND	Mercury, mg/L	0.000079	ND
Ammonia N, mg/L	0.02	0.036 J	Nickel, mg/L	0.0019	ND
Turbidity, NTU	0.059	0.096 J	Nitrite, mg/L	0.015	ND
Phenolics, mg/L	0.012	ND	Nitrate, mg/L	0.04	ND
Color, apparent Co/Pt ^f	5.0	ND	Ortho-phosphate, mg/L	0.0066	ND
Solids			Potassium, mg/L	0.0472	2.56
total suspended, mg/L	1.5	ND	Selenium, mg/L	0.0011	ND
Aluminum, mg/L	0.0477	ND	Silver, mg/L	0.00005	ND
Antimony, mg/L	0.0099	ND	Sodium, mg/L	0.25	8.25
Arsenic, mg/L	0.0014	ND	Sulfate, mg/L	1.5	8.0
Beryllium, mg/L	0.0005	ND	Sulfide, mg/L	0.022	ND
Boron, mg/L	0.0088	ND	Zinc, mg/L	0.0049	ND
Bromide, mg/L	2.0	ND	Ca/Mg	NA ^g	10.41
Cadmium, mg/L	0.00008	ND	Na/K	NA	3.22
Calcium, mg/L	0.0493	40.8	Volatile priority		
Chloride, mg/L	6.0	56.1	pollutants, µg/L	0.5-40	ND
Chlorine, residual, mg/L	0.04	ND	Acid extractable		
Chromium, mg/L	0.00092	ND	priority pollutants, µg/L	1.0-19	ND
Cobalt, mg/L	0.0017	ND	Base/neutral		
Copper, mg/L	0.0016	0.0043 J	priority pollutants, µg/L	1.0-19	ND
Cyanide, mg/L	0.004	ND	Pesticides/PCBs, µg/L	0.0019-0.29	ND
Iron, mg/L	0.0349	ND	Organophosphate		
Fluoride, mg/L	0.4	0.56	pesticides, µg/L	0.38-0.57	ND

^a Sample analyses performed at Lancaster Laboratories, Lancaster, Pennsylvania, date of sample collection 06 November 2002 unless indicated otherwise.

^b MDL = method detection limit, ^c ND indicates not detected at the MDL, ^d Value corrected for the filter blank, ^e "J" follows analytical values which were greater than the MDL but less than the limit of quantitation, ^f Units based on cobalt/platinum reference, ^g NA = not applicable.

TABLE 2
MEASURED CONCENTRATIONS OF H-24678 IN TEST SOLUTIONS

Nominal H-24678 Concentration ^a (mg/L)	[REDACTED] (mg/L)						
	Day -1 ^b	Day 0	Day 7 ^f	Day 11	Day 13	Day 20	Day 27
Water Control A	ND ^c	ND	ND	ND	ND	ND	ND
Water Control B	ND	ND	ND	ND	ND	ND	ND
IPA Control A	ND	ND	ND	ND	ND	ND	ND
IPA Control B	ND	ND	ND	ND	ND	ND	ND
0.63 A	0.94	0.88	0.53	0.72	0.70	0.73	0.68
0.63 B	0.98	0.96	0.49	0.76	0.69	0.78	0.70
1.3 A	1.6	1.6	0.64	1.3	1.2	1.3	1.3
1.3 B	1.6	1.6	0.81	1.2	1.2	1.3	1.2
2.5 A	2.9	2.7	2.2	2.7	2.6	2.9	2.4
2.5 B	2.9	2.8	2.0	2.7	2.8	2.9	2.5
5.0 A	5.2	5.6	3.8	5.2	5.4	6.2	5.7
5.0 B	5.6	5.9	1.9	5.3	5.2	5.5	5.9
10 A	12	11	4.8	10	9.8	12	10
10 B	12	10	4.1	9.7	9.6	11	11

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TABLE 2 (Continued)

MEASURED CONCENTRATIONS OF H-24678 IN TEST SOLUTIONS

Nominal H-24678 Concentration ^a (mg/L)	[REDACTED]						
	(mg/L)						
	Day 34	Day 41	Day 48 ^a	Day 55	Day 62	Day 69	Day 76
Water Control A	ND	ND	ND	ND	ND	ND	ND
Water Control B	ND	ND	ND	ND	ND	ND	ND
IPA Control A	ND	ND	ND	ND	ND	ND	ND
IPA Control B	ND	ND	ND	ND	ND	ND	ND
0.63 A	0.85	0.80	0.69	1.0	0.69 ⁱ	0.92	0.67
0.63 B	0.81	0.75	0.69	1.0	0.69 ⁱ	0.76	0.62
1.3 A	1.3	1.5	1.5	1.5	1.1 ⁱ	1.7	1.4
1.3 B	1.3	1.6	1.6	1.5	1.1 ⁱ	1.4	1.4
2.5 A	2.1	3.2 (3.4) ^g	3.2	2.9	2.2 ⁱ	4.0	2.3
2.5 B	2.2	3.2 (3.8) ^g	3.1	2.9	2.5 ⁱ	5.4	2.3
5.0 A	6.0	5.4	5.3	5.6	4.5 ⁱ	8.9	5.5
5.0 B	5.3	5.5	5.3	5.5	4.7 ⁱ	9.2	5.7
10 A	7.1	9.5	10	13	9.2	10	11
10 B	8.1	10	9.7	13	9.3	13	12

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TABLE 2 (Continued)

MEASURED CONCENTRATIONS OF H-24678 IN TEST SOLUTIONS

Nominal H-24678 Concentration ^a (mg/L)	Concentration (mg/L)		Mean, Measured Concentration (mg/L) ^d	Mean Percent Recovery ^e
	Day 83	Day 90		
Water Control A	ND	ND	---	---
Water Control B	ND	ND	---	---
IPA Control A	ND	ND	---	---
IPA Control B	ND	ND	---	---
0.63 A	0.69	0.79	0.76	121
0.63 B	0.63	0.73	0.74	117
1.3 A	1.4 ^j	1.2	1.3	100
1.3 B	1.3 ^j	1.1	1.3	100
2.5 A	2.1	2.4	2.7	108
2.5 B	2.0	2.5	2.9	116
5.0 A	5.7	5.4	5.6	112
5.0 B	5.8	5.2	5.5	110
10 A	11	10	9.9	99
10 B	11	8.8 ^k	10	100

a Defined in terms of H-24678 mg/L.

b Measured values prior to study start were used to verify system function but were not used to calculate mean measured test concentrations of H-24678.

c ND denotes not detected. The limit of detection for [REDACTED] was 0.0022 mg/L of H-24678. LOQ denotes below limit of quantitation. The limit of quantitation for [REDACTED] was 0.0072 mg/L of H-24678.

d Mean, measured [REDACTED] concentration was calculated as the average of values obtained from day 0 to day 90.

e Based on nominal concentration.

f Samples were analyzed one day after submission. This impacted the recoveries observed for [REDACTED] especially at higher nominal concentrations.

g Additional samples were submitted due to partially clogged delivery line. The results in brackets represent samples taken after removal of the clog.

h Reported data is the average of two runs of the day 48 samples.

i Reported data is the average of two runs of the day 62 samples.

j There was no [REDACTED] detected in 1.3 mg/L samples (replicate A and B) submitted on day 83. The results in the table represent data obtained for 1.3 mg/L samples submitted on day 84.

k Additionally, samples for this replicate were submitted on day 87 and day 88. The results of the analysis were: 3.6 and 4.1, respectively. The delivery tube to this replicate was clogged on day 87.

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TABLE 2 (Continued)

MEASURED CONCENTRATIONS OF H-24678 IN TEST SOLUTIONS

Nominal H-24678 Concentration ^a (mg/L)	Measured XXXXXXXXXX Concentration (mg/L)						
	Day -1 ^b	Day 0	Day 7 ^f	Day 11	Day 13	Day 20	Day 27
Water Control A	ND ^c	ND	ND	ND	ND	ND	ND
Water Control B	ND	ND	ND	ND	ND	ND	ND
IPA Control A	ND	ND	ND	ND	ND	ND	ND
IPA Control B	ND	ND	ND	ND	ND	ND	ND
0.63 A	0.43	0.35	0.51	0.47	0.40	0.39	0.36
0.63 B	0.67	0.40	0.37	0.44	0.34	0.33	0.32
1.3 A	0.96	0.58	0.82	0.87	0.75	0.77	0.81
1.3 B	0.85	0.68	0.82	0.85	0.94	0.73	0.57
2.5 A	2.1	1.2	1.6	1.7	1.4	1.3	1.3
2.5 B	1.9	1.2	1.8	1.9	1.8	1.6	1.4
5.0 A	5.2	2.4	3.3	4.4	4.6	4.0	3.5
5.0 B	3.5	3.3	3.9	3.4	3.6	3.0	3.0
10 A	8.5	5.5	8.6	8.5	8.0	8.9	10
10 B	9.4	5.8	5.6	8.1	7.1	7.5	7.3

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TABLE 2 (Continued)

MEASURED CONCENTRATIONS OF H-24678 IN TEST SOLUTIONS

Nominal H-24678 Concentration ^a (mg/L)	Measured [REDACTED] Concentration (mg/L)						
	Day 34	Day 41	Day 48 ^h	Day 55	Day 62	Day 69	Day 76
Water Control A	ND	ND	ND	ND	ND	ND	ND
Water Control B	ND	ND	ND	ND	ND	ND	ND
IPA Control A	ND	ND	ND	ND	ND	ND	ND
IPA Control B	ND	ND	ND	ND	ND	ND	ND
0.63 A	0.36	0.66	0.53	0.98	0.60 ⁱ	0.67	0.68
0.63 B	0.35	0.42	0.54	0.93	0.54 ⁱ	0.66	0.59
1.3 A	0.69	1.5	1.3	1.5	1.3 ⁱ	1.1	1.4
1.3 B	0.60	1.4	1.3	2.0	1.1 ⁱ	1.0	1.2
2.5 A	1.0	3.0 (2.7) ^g	2.5	3.8	2.6 ⁱ	2.5	2.0
2.5 B	1.3	1.9 (3.1) ^g	2.4	2.6	2.8 ⁱ	2.6	2.3
5.0 A	3.9	5.1	5.4	5.8	5.6 ⁱ	5.0	6.8
5.0 B	3.2	5.8	5.1	5.7	6.2 ⁱ	4.6	5.8
10 A	7.0	12	11	15	9.9 ⁱ	10	11
10 B	7.1	11	13	13	11 ⁱ	8.6	9.9

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TABLE 2 (Continued)

MEASURED CONCENTRATIONS OF H-24678 IN TEST SOLUTIONS

Nominal H-24678 Concentration ^a (mg/L)	Measured [REDACTED] concentration (mg/L)		Mean, Measured [REDACTED] Concentration (mg/L) ^d	Mean Percent Recovery ^e
	Day 83	Day 90		
Water Control A	ND	ND	---	---
Water Control B	ND	ND	---	---
IPA Control A	ND	ND	---	---
IPA Control B	ND	ND	---	---
0.63 A	0.79	0.72	0.57	90
0.63 B	0.60	0.66	0.50	79
1.3 A	1.2 ^j	1.1	1.0	77
1.3 B	1.3 ^j	1.1	1.0	77
2.5 A	2.3	1.9	2.1	84
2.5 B	2.5	2.1	2.1	84
5.0 A	5.5	2.6	4.5	90
5.0 B	6.4	4.7	4.5	90
10 A	11	13	10	100
10 B	11	8.9 ^k	9.0	90

- a Defined in terms of H-24678 mg/L.
- b Measured values prior to study start were used to verify system function but were not used to calculate mean measured test concentrations of H-24678.
- c ND denotes not detected. The limit of detection for [REDACTED] was 0.059 mg/L of H-24678. LOQ denotes below limit of quantitation. The limit of quantitation [REDACTED] was 0.20 mg/L of H-24678.
- d Mean, measured [REDACTED] concentration was calculated as the average of values obtained from day 0 to day 90.
- e Based on nominal concentration.
- f Samples were analyzed one day after submission.
- g Additional samples were submitted due to partially clogged delivery line. The results in brackets represent samples taken after removal of the clog.
- h Reported data is the average of two runs of the day 48 samples.
- i Reported data is the average of two runs of the day 62 samples.
- j There was no [REDACTED] detected in 1.3 mg/L samples (replicate A and B) submitted on day 83. The results in the table represent data obtained for 1.3 mg/L samples submitted on day 84.
- k Additionally, samples for this replicate were submitted on day 87 and day 88. The results of the analysis were: 8.9 and 8.7, respectively. The delivery tube to this replicate was clogged on day 87.

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TABLE 2 (Continued)

MEASURED CONCENTRATIONS OF H-24678 IN TEST SOLUTIONS

Nominal H-24678 Concentration ^a (mg/L)	Measured [REDACTED] Concentration (mg/L)						
	Day -1 ^b	Day 0	Day 7 ^f	Day 11	Day 13	Day 20	Day 27
Water Control A	ND ^c	ND	ND	ND	ND	ND	ND
Water Control B	ND	ND	ND	ND	ND	ND	ND
IPA Control A	ND	ND	ND	ND	ND	ND	ND
IPA Control B	ND	ND	ND	ND	ND	ND	ND
0.63 A	0.73	0.65	0.53	0.64	0.57	0.53	0.51
0.63 B	0.72	0.71	0.47	0.64	0.56	0.48	0.38
1.3 A	1.4	1.3	1.0	1.2	1.1	1.1	1.0
1.3 B	1.4	1.3	0.44	1.2	1.0	1.1	0.88
2.5 A	2.7	2.4	2.6	2.6	2.4	2.2	2.0
2.5 B	2.6	2.4	2.5	2.6	2.6	2.4	2.4
5.0 A	5.3	4.8	4.7	4.5	5.1	5.3	5.0
5.0 B	5.4	5.0	4.7	4.4	4.5	4.6	5.1
10 A	11	10	9.3	11	12	11	12
10 B	11	10	10	11	11	10	9.8

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TABLE 2 (Continued)

MEASURED CONCENTRATIONS OF H-24678 IN TEST SOLUTIONS

Nominal H-24678 Concentration ^a (mg/L)	Measured [REDACTED] Concentration (mg/L)						
	Day 34 ¹	Day 41	Day 48 ²	Day 55	Day 62	Day 69	Day 76
Water Control A	ND	ND	ND	ND	ND	ND	ND
Water Control B	ND	ND	ND	ND	ND	ND	ND
IPA Control A	ND	ND	ND	ND	ND	ND	ND
IPA Control B	ND	ND	ND	ND	ND	ND	ND
0.63 A	-	0.39	0.56	0.97	1.2 ⁱ	- ^m	0.67
0.63 B	-	0.30	0.67	0.80	1.1 ⁱ	- ^m	0.68
1.3 A	-	1.2	1.6	1.5	2.4 ⁱ	0.90	1.3
1.3 B	-	1.2	1.6	1.5	2.4 ⁱ	0.60	1.4
2.5 A	-	0.85 (2.9) ^g	3.4	3.1	4.8 ⁱ	4.8	2.1
2.5 B	-	0.68 (2.9) ^g	3.2	3.2	4.8 ⁱ	3.0	2.1
5.0 A	-	6.1	4.0	5.8	4.7 ⁱ	5.8	5.2
5.0 B	-	6.5	2.5	5.5	4.0 ⁱ	5.6	4.9
10 A	-	15	10	15	8.2 ⁱ	10	10
10 B	-	14	12	15	7.3 ⁱ	11	10

Company Sanitized. Does not contain TSCA CBI

TABLE 2 (Continued)

MEASURED CONCENTRATIONS OF H-24678 IN TEST SOLUTIONS

Nominal H-24678 Concentration ^a (mg/L)	Measured [REDACTED] Concentration (mg/L)		Mean, Measured [REDACTED] Concentration (mg/L) ^d	Mean Percent Recovery ^e
	Day 83	Day 90		
Water Control A	ND	ND	---	---
Water Control B	ND	ND	---	---
IPA Control A	ND	ND	---	---
IPA Control B	ND	ND	---	---
0.63 A	0.68	0.63	0.66	105
0.63 B	0.61	0.44	0.60	95
1.3 A	2.4 ^j	0.74	1.3	100
1.3 B	2.3 ^j	1.1	1.3	100
2.5 A	2.4	2.3	2.7	108
2.5 B	2.5	2.4	2.6	104
5.0 A	5.5	4.2	5.1	102
5.0 B	5.4	5.0	4.8	96
10 A	11	11	11	110
10 B	11	8.5 ^k	11	110

Company Sanitized. Does not contain TSCA CBI

TABLE 2 (Continued)

MEASURED CONCENTRATIONS OF H-24678 IN TEST SOLUTIONS

-
- a Defined in terms of H-24678 mg/L.
 - b Measured values prior to study start were used to verify system function but were not used to calculate mean measured test concentrations of H-24678.
 - c ND denotes not detected. The limit of detection for [REDACTED] was 0.042 mg/L of H-24678. LOQ denotes below limit of quantitation. The limit of quantitation for [REDACTED] was 0.14 mg/L of H-24678.
 - d Mean, measured [REDACTED] concentration was calculated as the average of values obtained from day 0 to day 90.
 - e Based on nominal concentration.
 - f Samples were analyzed one day after submission.
 - g Additional samples were submitted due to partially clogged delivery line. The results in brackets represent samples taken after removal of the clog.
 - h The analysis failed on day 48 samples for [REDACTED]. The reported data represent reanalysis of day 48 samples with modified mobile phase to allow quantitation of [REDACTED].
 - i Reported data is the average of two runs of the day 62 samples.
 - j There was no [REDACTED] detected in 1.3 mg/L samples (replicate A and B) submitted on day 83. The results in the table represent data obtained for 1.3 mg/L samples submitted on day 84.
 - k Additionally, samples for this replicate were submitted on day 87 and day 88. The results of the analysis were: 1.6 and 8.0, respectively. The delivery tube to this replicate was clogged on day 87.
 - l Problems with analytical method were experienced for [REDACTED] component. No data was obtained for this set of samples for [REDACTED] component.
 - m Sensitivity of the method was not sufficient to quantify the [REDACTED] for the 0.63 mg/L samples.

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TABLE 3

WATER CHEMISTRY OF THE DILUTION WATER CONTROL, IPA CONTROL, AND
HIGHEST TEST CONCENTRATION WITH SURVIVING ORGANISMS^a

Day	Replicate	Total Alkalinity (mg/L as CaCO ₃)	EDTA Hardness (mg/L as CaCO ₃)	Conductivity (µmhos/cm)
Dilution Water Control				
0	A	51	127	230
6	A	50	120	245
13	A	51	130	235
20	A	51	127	235
27	A	49	128	235
34	A	50	126	235
41	A	51	123	225
48	A	51	123	215
55	A	53	125	250
62	A	51	123	270
69	A	54	122	265
76	A	51	132	280
83	A	49	118	235
90	A	52	122	235
IPA Control				
0	A	49	127	235
6	A	51	120	240
13	A	51	130	235
20	A	50	127	235
27	A	50	129	240
34	A	51	127	235
41	A	51	122	225
48	A	50	123	215
55	A	51	127	250
62	A	51	123	270
69	A	54	125	265
76	A	51	130	283
83	A	50	118	235
90	A	52	122	235

Company Sanitized. Does not contain TSCA CBI

TABLE 3 (Continued)

WATER CHEMISTRY OF THE DILUTION WATER CONTROL, IPA CONTROL, AND
HIGHEST TEST CONCENTRATION WITH SURVIVING ORGANISMS^a

Day	Replicate	Total Alkalinity (mg/L as CaCO ₃)	EDTA Hardness (mg/L as CaCO ₃)	Conductivity (µmhos/cm)
Highest Test Concentration with Surviving Organisms – 10 mg/L				
0	A	51	127	230
6	A	51	119	240
13	A	51	129	235
20	A	51	127	235
27	A	50	127	240
34	A	51	126	235
41	A	50	126	220
48	A	50	128	215
55	A	51	125	250
62	A	53	123	270
69	A	56	128	260
76	A	50	130	280
83	A	54	119	235
90	A	52	125	235

a Based on nominal test concentrations.

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TABLE 4

TEMPERATURE (°C) OF TEST SOLUTIONS FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate	Dilution		Temperature (°C)				
		Water	IPA	Nominal Concentrations (mg/L)				
		Control	Control	0.63	1.3	2.5	5	10
0	A	11.7	11.7	11.7	11.7	11.6	11.6	11.7
0	B	11.7	11.7	11.7	11.7	11.7	11.6	11.7
6	A	11.7	11.6	11.6	11.7	11.6	11.6	11.7
6	B	11.7	11.6	11.6	11.7	11.6	11.6	11.7
13	A	11.6	11.6	11.6	11.6	11.5	11.6	11.6
13	B	11.6	11.7	11.6	11.7	11.5	11.6	11.6
20	A	11.6	11.6	11.5	11.6	11.5	11.6	11.6
20	B	11.6	11.5	11.5	11.6	11.6	11.6	11.6
27	A	11.6	11.5	11.5	11.6	11.5	11.6	11.6
27	B	11.5	11.5	11.5	11.5	11.6	11.5	11.6
34	A	11.4	11.4	11.4	11.4	11.4	11.4	11.4
34	B	11.4	11.4	11.4	11.4	11.4	11.4	11.4
41	A	11.6	11.6	11.6	11.6	11.6	11.6	11.6
41	B	11.6	11.5	11.5	11.6	11.6	11.6	11.6
48	A	11.3	11.2	11.2	11.2	11.2	11.2	11.2
48	B	11.3	11.2	11.1	11.2	11.2	11.1	11.1
55	A	11.2	11.2	11.1	11.2	11.2	11.1	11.2
55	B	11.2	11.1	11.1	11.2	11.1	11.2	11.3
62	A	11.5	11.5	11.5	11.6	11.5	11.5	11.5
62	B	11.5	11.5	11.5	11.6	11.5	11.5	11.6
69	A	11.1	11.0	11.0	11.0	11.0	11.0	11.0
69	B	11.1	11.0	11.0	11.0	11.1	11.0	11.0
76	A	11.3	11.3	11.2	11.3	11.3	11.2	11.3
76	B	11.3	11.2	11.2	11.3	11.2	11.2	11.3
83	A	11.5	11.4	11.4	11.4	11.4	11.4	11.5
83	B	11.5	11.4	11.4	11.4	11.4	11.4	11.4
90	A	11.3	11.3	11.3	11.3	11.2	11.3	11.3
90	B	11.3	11.3	11.3	11.3	11.2	11.2	11.3
Temperature (°C)								
Mean for all concentrations, including controls								11.4
Std. Dev. of for all concentrations, including controls								0.2
Minimum for all concentrations, including controls								11.0
Maximum for all concentrations, including controls								11.7

Company Sanitized. Does not contain TSCA CBI

TABLE 5

pH OF TEST SOLUTIONS FOR THE 90-DAY RAINBOW TROUT, *Oncorhynchus mykiss*,
EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate	Dilution		pH				
		Water	IPA	Nominal Concentrations (mg/L)				
		Control	Control	0.63	1.3	2.5	5	10
0	A	7.4	7.4	7.5	7.5	7.5	7.5	7.5
0	B	7.4	7.4	7.5	7.4	7.5	7.5	7.5
6	A	7.7	7.7	7.7	7.7	7.7	7.7	7.7
6	B	7.7	7.7	7.7	7.7	7.7	7.7	7.7
13	A	7.6	7.6	7.6	7.6	7.6	7.6	7.5
13	B	7.6	7.6	7.6	7.6	7.6	7.5	7.6
20	A	7.7	7.7	7.6	7.6	7.6	7.6	7.6
20	B	7.7	7.7	7.6	7.6	7.6	7.6	7.6
27	A	7.7	7.7	7.7	7.7	7.7	7.7	7.6
27	B	7.7	7.7	7.7	7.7	7.7	7.6	7.6
34	A	7.7	7.7	7.7	7.7	7.7	7.6	7.6
34	B	7.7	7.7	7.7	7.7	7.7	7.6	7.6
41	A	7.5	7.5	7.5	7.5	7.5	7.4	7.4
41	B	7.5	7.5	7.5	7.5	7.4	7.4	7.4
48	A	7.5	7.6	7.6	7.6	7.6	7.5	7.5
48	B	7.5	7.6	7.6	7.6	7.6	7.5	7.5
55	A	7.4	7.4	7.5	7.5	7.5	7.5	7.5
55	B	7.4	7.4	7.5	7.5	7.5	7.5	7.5
62	A	7.5	7.5	7.5	7.5	7.5	7.5	7.4
62	B	7.5	7.5	7.5	7.5	7.5	7.5	7.4
69	A	7.5	7.5	7.5	7.5	7.5	7.5	7.5
69	B	7.5	7.5	7.5	7.5	7.5	7.5	7.5
76	A	7.3	7.3	7.4	7.4	7.4	7.4	7.4
76	B	7.3	7.3	7.4	7.4	7.4	7.4	7.4
83	A	7.3	7.3	7.3	7.3	7.3	7.3	7.2
83	B	7.3	7.3	7.3	7.3	7.3	7.3	7.2
90	A	7.1	7.1	7.1	7.1	7.1	7.1	7.1
90	B	7.1	7.1	7.1	7.1	7.1	7.1	7.1
Minimum for all concentrations, including controls								7.1
Maximum for all concentrations, including controls								7.7

Company Sanitized. Does not contain TSCA CBI

TABLE 6

DISSOLVED OXYGEN CONCENTRATION (mg/L) OF TEST SOLUTIONS FOR THE
90-DAY RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate	Dilution Water Control	IPA Control	Dissolved Oxygen Concentration (mg/L) Nominal Concentrations (mg/L)				
				0.63	1.3	2.5	5	10
0	A	10.7	10.6	10.6	10.5	10.6	10.6	10.5
0	B	10.6	10.7	10.6	10.5	10.6	10.5	10.5
6	A	10.8	10.8	10.8	10.8	10.5	10.5	10.7
6	B	10.8	10.8	10.8	10.8	10.7	10.5	10.7
13	A	10.6	10.6	10.4	10.4	10.5	9.7	9.9
13	B	10.6	10.6	10.5	10.4	10.4	9.8	10.1
20	A	10.9	10.9	10.6	10.6	10.5	10.0	9.5
20	B	10.9	10.9	10.7	10.6	10.5	10.0	9.7
27	A	10.5	10.6	10.3	10.2	10.2	9.8	8.8
27	B	10.6	10.6	10.4	10.3	10.2	9.9	8.9
34	A	10.6	10.6	10.5	10.2	10.2	9.9	9.3
34	B	10.5	10.6	10.5	10.2	10.1	9.8	9.2
41	A	10.4	10.4	10.3	9.9	9.9	9.8	9.0
41	B	10.4	10.4	10.3	9.9	9.9	9.8	9.1
48	A	10.6	10.5	10.3	10.2	10.2	9.9	9.8
48	B	10.6	10.5	10.3	10.2	10.2	10.0	9.8
55	A	10.5	10.5	10.3	10.3	10.0	9.7	9.1
55	B	10.5	10.4	10.3	10.3	10.1	9.9	9.2
62	A	10.4	10.3	10.3	10.0	9.8	9.7	8.8
62	B	10.4	10.4	10.3	10.2	9.9	9.5	9.0
69	A	10.6	10.5	10.3	10.1	10.3	9.5	9.1
69	B	10.6	10.5	10.3	10.1	10.2	9.5	9.2
76	A	10.2	9.9	9.8	9.6	9.4	9.7	8.8
76	B	10.2	9.9	9.8	9.5	9.6	9.4	9.0
83	A	9.7	9.6	9.4	9.7	9.2	8.5	8.1
83	B	9.8	9.4	9.5	9.7	9.3	8.7	8.4
90	A	10.7	10.7	10.4	10.0	9.6	9.6	9.2
90	B	10.7	10.6	10.4	10.0	10.0	9.5	9.4
Dissolved Oxygen Concentration (mg/L)								
Mean for all concentrations, including controls								10.1
Std. Dev. for all concentrations, including controls								0.6
Minimum for all concentrations, including controls								8.1
Maximum for all concentrations, including controls								10.9

Company Sanitized. Does not contain TSCA CBI

TABLE 7

SUMMARY OF HATCHING, SURVIVAL, ABNORMALITIES, AND SWIM-UP FROM HATCHING TO THINNING
FOR THE 90-DAY RAINBOW TROUT, *ONCORHYNCHUS MYKISS*, EARLY LIFE-STAGE TOXICITY TEST

Nominal H-24678 Concentrations (mg/L)	Replicate	Hatching Day		Percent Hatch			Survival		Hatching to Thinning			First Day of Swim-Up
		First	Last	Number Hatching	Total	Percent	Number Alive	Number Hatching	Percent	Number Affected	Number Alive	Percent
Water Control	1	25	27	18	20	90%	18	18	100%	0	18	0%
	2	27	28	18	20	90%	18	18	100%	0	18	0%
	3	26	27	19	20	95%	18	19	95%	0	18	0%
	4	26	28	19	20	95%	19	19	100%	0	19	0%
	Overall Mean	26	28	19	20	93%	18	19	99%	0	18	0%
IPA Control	1	26	27	18	20	90%	18	18	100%	0	18	0%
	2	26	28	18	20	90%	18	18	100%	0	18	0%
	3	25	27	17	20	85%	17	17	100%	0	17	0%
	4	26	27	16	20	80%	16	16	100%	0	16	0%
	Overall Mean	26	27	17	20	86%	17	17	100%	0	17	0%
0.63	1	26	28	16	20	80%	16	16	100%	0	16	0%
	2	26	27	15	20	75%	15	15	100%	0	15	0%
	3	26	28	18	20	90%	18	18	100%	0	18	0%
	4	25	28	17	20	85%	17	17	100%	0	17	0%
	Overall Mean	26	28	17	20	83%	17	17	100%	0	17	0%

TABLE 7 (Continued)

SUMMARY OF HATCHING, SURVIVAL, ABNORMALITIES, AND SWIM-UP FROM HATCHING TO THINNING FOR THE 90-DAY Rainbow trout, *ONCORHYNCHUS MYKISS*, EARLY LIFE-STAGE TOXICITY TEST

Nominal H-24678 Concentrations (mg/L)	Replicate	Hatching Day		Percent Hatch			Survival			Hatching to Thinning			First Day of Swim-Up
		First	Last	Number Hatching	Total	Percent	Number Alive	Number Hatching	Percent	Number Affected	Number Alive	Percent	
1.3	1	26	29	17	20	85%	16	17	94%	0	16	0%	40
	2	25	27	18	20	90%	17	18	94%	0	17	0%	40
	3	25	27	17	20	85%	16	17	94%	0	16	0%	40
	4	25	27	18	20	90%	18	18	100%	0	18	0%	40
	Overall Mean	25	28	18	20	88%	17	18	96%	0	17	0%	40
2.5	1	26	29	17	20	85%	17	17	100%	0	17	0%	40
	2	26	28	19	20	95%	19	19	100%	0	19	0%	40
	3	26	28	19	20	95%	19	19	100%	0	19	0%	40
	4	25	28	17	20	85%	17	17	100%	0	17	0%	40
	Overall Mean	26	28	18	20	90%	18	18	100%	0	18	0%	40
5	1	26	28	14	20	70%	14	14	100%	0	14	0%	40
	2	24	27	12	20	60%	12	12	100%	0	12	0%	40
	3	25	27	15	20	75%	14	15	93%	0	14	0%	40
	4	26	28	14	20	70%	14	14	100%	0	14	0%	40
	Overall Mean	25	28	14	20	69%	14	14	98%	0	14	0%	40

TABLE 7 (Continued)

SUMMARY OF HATCHING, SURVIVAL, ABNORMALITIES, AND SWIM-UP FROM HATCHING TO THINNING FOR THE 90-DAY RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Nominal H-24678 Concentrations (mg/L)	Replicate	Hatching Day		Percent Hatch			Survival		Hatching to Thinning			First Day of Swim-Up	
		First	Last	Number Hatching	Total	Percent	Number Alive	Number Hatching	Percent	Number Affected	Number Alive		Percent
10	1	25	27	16	20	80%	15	16	94%	0	15	0%	40
	2	26	27	15	20	75%	15	15	100%	0	15	0%	40
	3	25	27	14	20	70%	14	14	100%	0	14	0%	40
	4	25	27	14	20	70%	13	14	93%	0	13	0%	40
Overall Mean		25	27	15	20	74%	14	15	97%	0	14	0%	40

TABLE 8

SUMMARY OF SURVIVAL, ABNORMALITIES, AND GROWTH FROM THINNING TO TEST END FOR THE
90-DAY RAINBOW TROUT, *ONCORHYNCHUS MYKISS*, EARLY LIFE-STAGE TOXICITY TEST

Nominal H-24678 Concentrations (mg/L)	Replicate	Survival			Thinning to Test End			Growth of Surviving Fingerlings		
		Number Alive	Total	Percent	Number Affected	Number Alive	Percent	Mean Standard Length ± Std. Dev. (cm)	Mean Wet Weight ± Std. Dev. (g)	
Water Control	A	15	15	100%	0	15	0%	4.51 ± 0.31	1.3119 ± 0.3599	
	B	15	15	100%	0	15	0%	4.57 ± 0.37	1.3265 ± 0.2845	
	Overall Mean	15	15	100%	0	15	0%	4.54 ± 0.34	1.3192 ± 0.3244	
IPA Control	A	15	15	100%	0	15	0%	4.47 ± 0.39	1.2986 ± 0.3626	
	B	15	15	100%	0	15	0%	4.37 ± 0.41	1.3274 ± 0.4556	
	Overall Mean	15	15	100%	0	15	0%	4.42 ± 0.40	1.3130 ± 0.4117	
0.63	A	15	15	100%	1	15	7%	4.37 ± 0.49	1.2107 ± 0.4449	
	B	15	15	100%	0	15	0%	4.31 ± 0.56	1.2187 ± 0.5838	
	Overall Mean	15	15	100%	1	15	3%	4.34 ± 0.52	1.2147 ± 0.5190	
1.3	A	15	15	100%	0	15	0%	4.27 ± 0.49	1.1729 ± 0.4884	
	B	15	15	100%	1	15	7%	4.25 ± 0.51	1.1803 ± 0.3829	
	Overall Mean	15	15	100%	1	15	3%	4.26 ± 0.50	1.1766 ± 0.4388	

TABLE 8 (Continued)

SUMMARY OF SURVIVAL, ABNORMALITIES, AND GROWTH FROM THINNING TO TEST END FOR THE
90-DAY RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Nominal H-24678 Concentrations (mg/L)	Replicate	Survival			Thinning to Test End			Surviving Fingerlings	
		Number Alive	Total	Percent	Number Affected	Number Alive	Percent	Mean Standard Length ± Std. Dev. (cm)	Mean Wet Weight ± Std. Dev. (g)
2.5	A	15	15	100%	0	15	0%	4.35 ± 0.43	1.1924 ± 0.3929
	B	15	15	100%	0	15	0%	4.18 ± 0.53	1.1735 ± 0.5481
	Overall Mean	15	15	100%	0	15	0%	4.26 ± 0.48	1.1830 ± 0.4769
5	A	15	15	100%	0	15	0%	4.37 ± 0.47	1.2494 ± 0.4192
	B	15	15	100%	1	15	7%	4.35 ± 0.52	1.2344 ± 0.4277
	Overall Mean	15	15	100%	1	15	3%	4.36 ± 0.50	1.2419 ± 0.4235
10	A	15	15	100%	3	15	20%	4.25 ± 0.50	1.1301 ± 0.4911
	B ^a	15	15	100%	0	15	0%	4.08 ± 0.35	1.1415 ± 0.3634
	Overall Mean	15	15	100%	2	15	10%	4.17 ± 0.43	1.1358 ± 0.4320

^a 12 of 15 fish died on day 87 due to a clogged test solution delivery tube and subsequent low dissolved oxygen. Since these deaths were not test substance related these fish are indicated as having survived to test end and were included in all subsequent data analyses.

TABLE 9

DILUTION WATER CONTROL: EMBRYO SURVIVAL AND HATCHING DATA FOR
THE 90-DAY RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY
TEST

Day	Replicate †	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
0	1A	0	-	0	20	-	-
0	2A	0	-	0	20	-	-
0	1B	0	-	0	20	-	-
0	2B	0	-	0	20	-	-
1	1A	0	-	0	20	-	-
1	2A	0	-	0	20	-	-
1	1B	0	-	0	20	-	-
1	2B	0	-	0	20	-	-
2	1A	0	-	0	20	-	-
2	2A	0	-	0	20	-	-
2	1B	0	-	0	20	-	-
2	2B	0	-	0	20	-	-
3	1A	0	-	0	20	-	-
3	2A	0	-	0	20	-	-
3	1B	0	-	0	20	-	-
3	2B	0	-	0	20	-	-
4	1A	0	-	0	20	-	-
4	2A	0	-	0	20	-	-
4	1B	0	-	0	20	-	-
4	2B	0	-	0	20	-	-
5	1A	0	-	0	20	-	-
5	2A	0	-	0	20	-	-
5	1B	0	-	0	20	-	-
5	2B	0	-	0	20	-	-
6	1A	0	-	0	20	-	-
6	2A	0	-	0	20	-	-
6	1B	0	-	0	20	-	-
6	2B	0	-	0	20	-	-
7	1A	0	-	0	20	-	-
7	2A	0	-	0	20	-	-
7	1B	0	-	0	20	-	-
7	2B	0	-	0	20	-	-

TABLE 9 (Continued)

DILUTION WATER CONTROL: EMBRYO SURVIVAL AND HATCHING DATA FOR
THE 90-DAY RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY
TEST

Day	Replicate [†]	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
8	1A	0	-	0	20	-	-
8	2A	0	-	0	20	-	-
8	1B	0	-	0	20	-	-
8	2B	0	-	0	20	-	-
9	1A	0	-	0	20	-	-
9	2A	0	-	0	20	-	-
9	1B	0	-	0	20	-	-
9	2B	0	-	0	20	-	-
10	1A	0	-	0	20	-	-
10	2A	0	-	0	20	-	-
10	1B	0	-	0	20	-	-
10	2B	0	-	0	20	-	-
11	1A	0	-	0	20	-	-
11	2A	0	-	0	20	-	-
11	1B	0	-	0	20	-	-
11	2B	0	-	0	20	-	-
12	1A	0	-	0	20	-	-
12	2A	0	-	0	20	-	-
12	1B	0	-	0	20	-	-
12	2B	0	-	0	20	-	-
13	1A	0	-	0	20	-	-
13	2A	0	-	0	20	-	-
13	1B	0	-	0	20	-	-
13	2B	0	-	0	20	-	-
14	1A	2	-	2	18	-	-
14	2A	2	-	2	18	-	-
14	1B	0	-	0	20	-	-
14	2B	1	-	1	19	-	-
15	1A	0	-	2	18	-	-
15	2A	0	-	2	18	-	-
15	1B	0	-	0	20	-	-
15	2B	0	-	1	19	-	-

Company Sanitized. Does not contain TSCA CBI

TABLE 9 (Continued)

DILUTION WATER CONTROL: EMBRYO SURVIVAL AND HATCHING DATA FOR
THE 90-DAY RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY
TEST

Day	Replicate [†]	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
16	1A	0	-	2	18	-	-
16	2A	0	-	2	18	-	-
16	1B	0	-	0	20	-	-
16	2B	0	-	1	19	-	-
17	1A	0	-	2	18	-	-
17	2A	0	-	2	18	-	-
17	1B	0	-	0	20	-	-
17	2B	0	-	1	19	-	-
18	1A	0	-	2	18	-	-
18	2A	0	-	2	18	-	-
18	1B	0	-	0	20	-	-
18	2B	0	-	1	19	-	-
19	1A	0	-	2	18	-	-
19	2A	0	-	2	18	-	-
19	1B	0	-	0	20	-	-
19	2B	0	-	1	19	-	-
20	1A	0	-	2	18	-	-
20	2A	0	-	2	18	-	-
20	1B	0	-	0	20	-	-
20	2B	0	-	1	19	-	-
21	1A	0	-	2	18	-	-
21	2A	0	-	2	18	-	-
21	1B	0	-	0	20	-	-
21	2B	0	-	1	19	-	-
22	1A	0	-	2	18	-	-
22	2A	0	-	2	18	-	-
22	1B	0	-	0	20	-	-
22	2B	0	-	1	19	-	-
23	1A	0	-	2	18	-	-
23	2A	0	-	2	18	-	-
23	1B	0	-	0	20	-	-
23	2B	0	-	1	19	-	-

TABLE 9 (Continued)

DILUTION WATER CONTROL: EMBRYO SURVIVAL AND HATCHING DATA FOR
THE 90-DAY RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY
TEST

Day	Replicate †	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
24	1A	0	0	2	18	-	-
24	2A	0	0	2	18	-	-
24	1B	0	0	0	20	-	-
24	2B	0	0	1	19	-	-
25	1A	0	0	2	17	0	1
25	2A	0	0	2	18	0	0
25	1B	0	0	0	20	0	0
25	2B	0	0	1	19	0	0
26	1A	0	0	2	15	0	3
26	2A	0	0	2	18	0	0
26	1B	0	0	0	11	0	9
26	2B	0	0	1	11	0	8
27	1A	0	0	2	0	0	18
27	2A	0	0	2	3	0	15
27	1B	1	0	1	0	0	19
27	2B	0	0	1	1	0	18
28	1A	0	0	2	0	0	18
28	2A	0	0	2	0	0	18
28	1B	0	0	1	0	0	19
28	2B	0	0	1	0	0	19
29	1A	0	0	2	0	0	18
29	2A	0	0	2	0	0	18
29	1B	0	0	1	0	0	19
29	2B	0	0	1	0	0	19
30	1A	0	0	2	0	0	18
30	2A	0	0	2	0	0	18
30	1B	0	0	1	0	0	19
30	2B	0	0	1	0	0	19
31	1A	0	0	2	0	0	18
31	2A	0	0	2	0	0	18
31	1B	0	0	1	0	0	19
31	2B	0	0	1	0	0	19

TABLE 9 (Continued)

DILUTION WATER CONTROL: EMBRYO SURVIVAL AND HATCHING DATA FOR
THE 90-DAY RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY
TEST

Day	Replicate [†]	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
32	1A	0	0	2	0	0	18
32	2A	0	0	2	0	0	18
32	1B	0	0	1	0	0	19
32	2B	0	0	1	0	0	19
33	1A	0	0	2	0	0	18
33	2A	0	0	2	0	0	18
33	1B	0	0	1	0	0	19
33	2B	0	0	1	0	0	19
34	1A	0	0	2	0	0	18
34	2A	0	0	2	0	0	18
34	1B	0	0	1	0	0	19
34	2B	0	0	1	0	0	19
35	1A	0	0	2	0	0	18
35	2A	0	0	2	0	0	18
35	1B	0	0	1	0	0	19
35	2B	0	0	1	0	0	19
36	1A	0	0	2	0	0	18
36	2A	0	0	2	0	0	18
36	1B	0	0	1	0	0	19 ^{lb}
36	2B	0	0	1	0	0	19
37	1A	0	0	2	0	0	18
37	2A	0	0	2	0	0	18
37	1B	0	0	1	0	0	19 ^{lb}
37	2B	0	0	1	0	0	19
38	1A	0	0	2	0	0	18
38	2A	0	0	2	0	0	18
38	1B	0	0	1	0	0	19 ^{lb}
38	2B	0	0	1	0	0	19
39	1A	0	0	2	0	0	18
39	2A	0	0	2	0	0	18
39	1B	0	0	1	0	0	19 ^{lb}
39	2B	0	0	1	0	0	19

Company Sanitized. Does not contain TSCA CBI

TABLE 9 (Continued)

DILUTION WATER CONTROL: EMBRYO SURVIVAL AND HATCHING DATA FOR
THE 90-DAY RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY
TEST

Day	Replicate [†]	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
40	1A	0	0	2	0	0	18
40	2A	0	0	2	0	0	18
40	1B	0	0	1	0	0	19 ^b
40	2B	0	0	1	0	0	19
41	1A	0	0	2	0	0	18
41	2A	0	0	2	0	0	18
41	1B	0	1	1	0	1	18
41	2B	0	0	1	0	0	19
42	1A	0	0	2	0	0	18
42	2A	0	0	2	0	0	18
42	1B	0	0	1	0	1	18
42	2B	0	0	1	0	0	19
43	1A	0	0	2	0	0	18
43	2A	0	0	2	0	0	18
43	1B	0	0	1	0	1	18
43	2B	0	0	1	0	0	19
44	1A	0	0	2	0	0	18
44	2A	0	0	2	0	0	18
44	1B	0	0	1	0	1	18
44	2B	0	0	1	0	0	19
45	1A	0	0	2	0	0	18
45	2A	0	0	2	0	0	18
45	1B	0	0	1	0	1	18
45	2B	0	0	1	0	0	19

[†] Four replicates per concentration (i.e., 1A - 2B).

Ψ Dash (-) denotes no data available.

^b Pale in color.

Company Sanitized. Does not contain TSCA CBI

TABLE 10

IPA CONTROL: EMBRYO SURVIVAL AND HATCHING DATA FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate [†]	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
0	1A	0	-	0	20	-	-
0	2A	0	-	0	20	-	-
0	1B	0	-	0	20	-	-
0	2B	0	-	0	20	-	-
1	1A	0	-	0	20	-	-
1	2A	0	-	0	20	-	-
1	1B	0	-	0	20	-	-
1	2B	0	-	0	20	-	-
2	1A	0	-	0	20	-	-
2	2A	0	-	0	20	-	-
2	1B	0	-	0	20	-	-
2	2B	0	-	0	20	-	-
3	1A	0	-	0	20	-	-
3	2A	0	-	0	20	-	-
3	1B	0	-	0	20	-	-
3	2B	0	-	0	20	-	-
4	1A	0	-	0	20	-	-
4	2A	0	-	0	20	-	-
4	1B	0	-	0	20	-	-
4	2B	0	-	0	20	-	-
5	1A	0	-	0	20	-	-
5	2A	0	-	0	20	-	-
5	1B	0	-	0	20	-	-
5	2B	0	-	0	20	-	-
6	1A	0	-	0	20	-	-
6	2A	0	-	0	20	-	-
6	1B	0	-	0	20	-	-
6	2B	0	-	0	20	-	-
7	1A	0	-	0	20	-	-
7	2A	0	-	0	20	-	-
7	1B	0	-	0	20	-	-
7	2B	0	-	0	20	-	-

Company Sanitized. Does not contain TSCA CBI

TABLE 10 (Continued)

IPA CONTROL: EMBRYO SURVIVAL AND HATCHING DATA FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate [†]	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
8	1A	0	-	0	20	-	-
8	2A	0	-	0	20	-	-
8	1B	0	-	0	20	-	-
8	2B	0	-	0	20	-	-
9	1A	0	-	0	20	-	-
9	2A	0	-	0	20	-	-
9	1B	0	-	0	20	-	-
9	2B	0	-	0	20	-	-
10	1A	0	-	0	20	-	-
10	2A	1	-	1	19	-	-
10	1B	0	-	0	20	-	-
10	2B	0	-	0	20	-	-
11	1A	0	-	0	20	-	-
11	2A	0	-	1	19	-	-
11	1B	0	-	0	20	-	-
11	2B	1	-	1	19	-	-
12	1A	0	-	0	20	-	-
12	2A	0	-	1	19	-	-
12	1B	0	-	0	20	-	-
12	2B	0	-	1	19	-	-
13	1A	2	-	2	18	-	-
13	2A	1	-	2	18	-	-
13	1B	2	-	2	18	-	-
13	2B	1	-	2	18	-	-
14	1A	0	-	2	18	-	-
14	2A	0	-	2	18	-	-
14	1B	1	-	3	17	-	-
14	2B	2	-	4	16	-	-
15	1A	0	-	2	18	-	-
15	2A	0	-	2	18	-	-
15	1B	0	-	3	17	-	-
15	2B	0	-	4	16	-	-

Company Sanitized. Does not contain TSCA CBI

TABLE 10 (Continued)

IPA CONTROL: EMBRYO SURVIVAL AND HATCHING DATA FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate [†]	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
16	1A	0	-	2	18	-	-
16	2A	0	-	2	18	-	-
16	1B	0	-	3	17	-	-
16	2B	0	-	4	16	-	-
17	1A	0	-	2	18	-	-
17	2A	0	-	2	18	-	-
17	1B	0	-	3	17	-	-
17	2B	0	-	4	16	-	-
18	1A	0	-	2	18	-	-
18	2A	0	-	2	18	-	-
18	1B	0	-	3	17	-	-
18	2B	0	-	4	16	-	-
19	1A	0	-	2	18	-	-
19	2A	0	-	2	18	-	-
19	1B	0	-	3	17	-	-
19	2B	0	-	4	16	-	-
20	1A	0	-	2	18	-	-
20	2A	0	-	2	18	-	-
20	1B	0	-	3	17	-	-
20	2B	0	-	4	16	-	-
21	1A	0	-	2	18	-	-
21	2A	0	-	2	18	-	-
21	1B	0	-	3	17	-	-
21	2B	0	-	4	16	-	-
22	1A	0	-	2	18	-	-
22	2A	0	-	2	18	-	-
22	1B	0	-	3	17	-	-
22	2B	0	-	4	16	-	-
23	1A	0	-	2	18	-	-
23	2A	0	-	2	18	-	-
23	1B	0	-	3	17	-	-
23	2B	0	-	4	16	-	-

Company Sanitized. Does not contain TSCA CBI

TABLE 10 (Continued)

IPA CONTROL: EMBRYO SURVIVAL AND HATCHING DATA FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate †	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
24	1A	0	0	2	18	-	-
24	2A	0	0	2	18	-	-
24	1B	0	0	3	17	-	-
24	2B	0	0	4	16	-	-
25	1A	0	0	2	18	0	0
25	2A	0	0	2	18	0	0
25	1B	0	0	3	16	0	1
25	2B	0	0	4	16	0	0
26	1A	0	0	2	12	0	6
26	2A	0	0	2	16	0	2
26	1B	0	0	3	13	0	4
26	2B	0	0	4	11	0	5
27	1A	0	0	2	0	0	18
27	2A	0	0	2	1	0	17
27	1B	0	0	3	0	0	17
27	2B	0	0	4	0	0	16
28	1A	0	0	2	0	0	18
28	2A	0	0	2	0	0	18
28	1B	0	0	3	0	0	17
28	2B	0	0	4	0	0	16
29	1A	0	0	2	0	0	18
29	2A	0	0	2	0	0	18
29	1B	0	0	3	0	0	17
29	2B	0	0	4	0	0	16
30	1A	0	0	2	0	0	18
30	2A	0	0	2	0	0	18
30	1B	0	0	3	0	0	17
30	2B	0	0	4	0	0	16
31	1A	0	0	2	0	0	18
31	2A	0	0	2	0	0	18
31	1B	0	0	3	0	0	17
31	2B	0	0	4	0	0	16

Company Sanitized. Does not contain TSCA CB

TABLE 10 (Continued)

IPA CONTROL: EMBRYO SURVIVAL AND HATCHING DATA FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate [†]	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
32	1A	0	0	2	0	0	18
32	2A	0	0	2	0	0	18
32	1B	0	0	3	0	0	17
32	2B	0	0	4	0	0	16
33	1A	0	0	2	0	0	18
33	2A	0	0	2	0	0	18
33	1B	0	0	3	0	0	17
33	2B	0	0	4	0	0	16
34	1A	0	0	2	0	0	18
34	2A	0	0	2	0	0	18
34	1B	0	0	3	0	0	17
34	2B	0	0	4	0	0	16
35	1A	0	0	2	0	0	18
35	2A	0	0	2	0	0	18
35	1B	0	0	3	0	0	17
35	2B	0	0	4	0	0	16
36	1A	0	0	2	0	0	18
36	2A	0	0	2	0	0	18
36	1B	0	0	3	0	0	17
36	2B	0	0	4	0	0	16
37	1A	0	0	2	0	0	18
37	2A	0	0	2	0	0	18
37	1B	0	0	3	0	0	17
37	2B	0	0	4	0	0	16
38	1A	0	0	2	0	0	18
38	2A	0	0	2	0	0	18
38	1B	0	0	3	0	0	17
38	2B	0	0	4	0	0	16
39	1A	0	0	2	0	0	18
39	2A	0	0	2	0	0	18
39	1B	0	0	3	0	0	17
39	2B	0	0	4	0	0	16

Company Sanitized. Does not contain TSCA CBI

TABLE 10 (Continued)

IPA CONTROL: EMBRYO SURVIVAL AND HATCHING DATA FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate [†]	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
40	1A	0	0	2	0	0	18
40	2A	0	0	2	0	0	18
40	1B	0	0	3	0	0	17
40	2B	0	0	4	0	0	16
41	1A	0	0	2	0	0	18
41	2A	0	0	2	0	0	18
41	1B	0	0	3	0	0	17
41	2B	0	0	4	0	0	16
42	1A	0	0	2	0	0	18
42	2A	0	0	2	0	0	18
42	1B	0	0	3	0	0	17
42	2B	0	0	4	0	0	16
43	1A	0	0	2	0	0	18
43	2A	0	0	2	0	0	18
43	1B	0	0	3	0	0	17
43	2B	0	0	4	0	0	16
44	1A	0	0	2	0	0	18
44	2A	0	0	2	0	0	18
44	1B	0	0	3	0	0	17
44	2B	0	0	4	0	0	16
45	1A	0	0	2	0	0	18
45	2A	0	0	2	0	0	18
45	1B	0	0	3	0	0	17
45	2B	0	0	4	0	0	16

[†] Four replicates per concentration (i.e., 1A - 2B).

^Ψ Dash (-) denotes no data available.

Company Sanitized. Does not contain TSCA CBI

TABLE 11

0.63 mg/L: EMBRYO SURVIVAL AND HATCHING DATA FOR THE 90-DAY RAINBOW
TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate †	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
0	1A	0	-	0	20	-	-
0	2A	0	-	0	20	-	-
0	1B	0	-	0	20	-	-
0	2B	0	-	0	20	-	-
1	1A	0	-	0	20	-	-
1	2A	0	-	0	20	-	-
1	1B	0	-	0	20	-	-
1	2B	0	-	0	20	-	-
2	1A	0	-	0	20	-	-
2	2A	0	-	0	20	-	-
2	1B	0	-	0	20	-	-
2	2B	0	-	0	20	-	-
3	1A	0	-	0	20	-	-
3	2A	0	-	0	20	-	-
3	1B	0	-	0	20	-	-
3	2B	0	-	0	20	-	-
4	1A	0	-	0	20	-	-
4	2A	0	-	0	20	-	-
4	1B	0	-	0	20	-	-
4	2B	0	-	0	20	-	-
5	1A	0	-	0	20	-	-
5	2A	0	-	0	20	-	-
5	1B	0	-	0	20	-	-
5	2B	0	-	0	20	-	-
6	1A	0	-	0	20	-	-
6	2A	0	-	0	20	-	-
6	1B	0	-	0	20	-	-
6	2B	0	-	0	20	-	-
7	1A	1	-	1	19	-	-
7	2A	1	-	1	19	-	-
7	1B	0	-	0	20	-	-
7	2B	0	-	0	20	-	-

Company Sanitized. Does not contain TSCA CBI

TABLE 11 (Continued)

0.63 mg/L: EMBRYO SURVIVAL AND HATCHING DATA FOR THE 90-DAY RAINBOW
TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate [†]	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
8	1A	0	-	1	19	-	-
8	2A	0	-	1	19	-	-
8	1B	0	-	0	20	-	-
8	2B	0	-	0	20	-	-
9	1A	0	-	1	19	-	-
9	2A	0	-	1	19	-	-
9	1B	0	-	0	20	-	-
9	2B	0	-	0	20	-	-
10	1A	0	-	1	19	-	-
10	2A	0	-	1	19	-	-
10	1B	0	-	0	20	-	-
10	2B	0	-	0	20	-	-
11	1A	0	-	1	19	-	-
11	2A	0	-	1	19	-	-
11	1B	0	-	0	20	-	-
11	2B	0	-	0	20	-	-
12	1A	1	-	2	18	-	-
12	2A	2	-	3	17	-	-
12	1B	1	-	1	19	-	-
12	2B	0	-	0	20	-	-
13	1A	2	-	4	16	-	-
13	2A	2	-	5	15	-	-
13	1B	1	-	2	18	-	-
13	2B	3	-	3	17	-	-
14	1A	0	-	4	16	-	-
14	2A	0	-	5	15	-	-
14	1B	0	-	2	18	-	-
14	2B	0	-	3	17	-	-
15	1A	0	-	4	16	-	-
15	2A	0	-	5	15	-	-
15	1B	0	-	2	18	-	-
15	2B	0	-	3	17	-	-

Company Sanitized. Does not contain TSCA CBI

TABLE 11 (Continued)

0.63 mg/L: EMBRYO SURVIVAL AND HATCHING DATA FOR THE 90-DAY RAINBOW
TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate [†]	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
16	1A	0	-	4	16	-	-
16	2A	0	-	5	15	-	-
16	1B	0	-	2	18	-	-
16	2B	0	-	3	17	-	-
17	1A	0	-	4	16	-	-
17	2A	0	-	5	15	-	-
17	1B	0	-	2	18	-	-
17	2B	0	-	3	17	-	-
18	1A	0	-	4	16	-	-
18	2A	0	-	5	15	-	-
18	1B	0	-	2	18	-	-
18	2B	0	-	3	17	-	-
19	1A	0	-	4	16	-	-
19	2A	0	-	5	15	-	-
19	1B	0	-	2	18	-	-
19	2B	0	-	3	17	-	-
20	1A	0	-	4	16	-	-
20	2A	0	-	5	15	-	-
20	1B	0	-	2	18	-	-
20	2B	0	-	3	17	-	-
21	1A	0	-	4	16	-	-
21	2A	0	-	5	15	-	-
21	1B	0	-	2	18	-	-
21	2B	0	-	3	17	-	-
22	1A	0	-	4	16	-	-
22	2A	0	-	5	15	-	-
22	1B	0	-	2	18	-	-
22	2B	0	-	3	17	-	-
23	1A	0	-	4	16	-	-
23	2A	0	-	5	15	-	-
23	1B	0	-	2	18	-	-
23	2B	0	-	3	17	-	-

Company Sanitized. Does not contain TSCA CBI

TABLE 11 (Continued)

0.63 mg/L: EMBRYO SURVIVAL AND HATCHING DATA FOR THE 90-DAY RAINBOW
TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate [†]	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
24	1A	0	-	4	16	-	-
24	2A	0	-	5	15	-	-
24	1B	0	-	2	18	-	-
24	2B	0	-	3	17	-	-
25	1A	0	0	4	16	0	0
25	2A	0	0	5	15	0	0
25	1B	0	0	2	18	0	0
25	2B	0	0	3	16	0	1
26	1A	0	0	4	11	0	5
26	2A	0	0	5	5	0	10
26	1B	0	0	2	12	0	6
26	2B	0	0	3	10	0	7
27	1A	0	0	4	2	0	14
27	2A	0	0	5	0	0	15
27	1B	0	0	2	2	0	16
27	2B	0	0	3	1	0	16
28	1A	0	0	4	0	0	16
28	2A	0	0	5	0	0	15
28	1B	0	0	2	0	0	18
28	2B	0	0	3	0	0	17
29	1A	0	0	4	0	0	16
29	2A	0	0	5	0	0	15
29	1B	0	0	2	0	0	18
29	2B	0	0	3	0	0	17
30	1A	0	0	4	0	0	16
30	2A	0	0	5	0	0	15
30	1B	0	0	2	0	0	18
30	2B	0	0	3	0	0	17
31	1A	0	0	4	0	0	16
31	2A	0	0	5	0	0	15
31	1B	0	0	2	0	0	18
31	2B	0	0	3	0	0	17

Company Sanitized. Does not contain TSCA CBI

TABLE 11 (Continued)

0.63 mg/L: EMBRYO SURVIVAL AND HATCHING DATA FOR THE 90-DAY RAINBOW
TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate [†]	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
32	1A	0	0	4	0	0	16
32	2A	0	0	5	0	0	15
32	1B	0	0	2	0	0	18
32	2B	0	0	3	0	0	17
33	1A	0	0	4	0	0	16
33	2A	0	0	5	0	0	15
33	1B	0	0	2	0	0	18
33	2B	0	0	3	0	0	17
34	1A	0	0	4	0	0	16
34	2A	0	0	5	0	0	15
34	1B	0	0	2	0	0	18
34	2B	0	0	3	0	0	17
35	1A	0	0	4	0	0	16
35	2A	0	0	5	0	0	15
35	1B	0	0	2	0	0	18
35	2B	0	0	3	0	0	17
36	1A	0	0	4	0	0	16
36	2A	0	0	5	0	0	15
36	1B	0	0	2	0	0	18
36	2B	0	0	3	0	0	17
37	1A	0	0	4	0	0	16
37	2A	0	0	5	0	0	15
37	1B	0	0	2	0	0	18
37	2B	0	0	3	0	0	17
38	1A	0	0	4	0	0	16
38	2A	0	0	5	0	0	15
38	1B	0	0	2	0	0	18
38	2B	0	0	3	0	0	17
39	1A	0	0	4	0	0	16
39	2A	0	0	5	0	0	15
39	1B	0	0	2	0	0	18
39	2B	0	0	3	0	0	17

Company Sanitized. Does not contain TSCA CBI

TABLE 11 (Continued)

0.63 mg/L: EMBRYO SURVIVAL AND HATCHING DATA FOR THE 90-DAY RAINBOW
TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate [†]	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
40	1A	0	0	4	0	0	16
40	2A	0	0	5	0	0	15
40	1B	0	0	2	0	0	18
40	2B	0	0	3	0	0	17
41	1A	0	0	4	0	0	16
41	2A	0	0	5	0	0	15
41	1B	0	0	2	0	0	18
41	2B	0	0	3	0	0	17
42	1A	0	0	4	0	0	16
42	2A	0	0	5	0	0	15
42	1B	0	0	2	0	0	18
42	2B	0	0	3	0	0	17
43	1A	0	0	4	0	0	16
43	2A	0	0	5	0	0	15
43	1B	0	0	2	0	0	18
43	2B	0	0	3	0	0	17
44	1A	0	0	4	0	0	16
44	2A	0	0	5	0	0	15
44	1B	0	0	2	0	0	18
44	2B	0	0	3	0	0	17
45	1A	0	0	4	0	0	16
45	2A	0	0	5	0	0	15
45	1B	0	0	2	0	0	18
45	2B	0	0	3	0	0	17

[†] Four replicates per concentration (i.e., 1A - 2B).

Ψ Dash (-) denotes no data available.

Company Sanitized. Does not contain TSCA CBI

TABLE 12

1.3 mg/L: EMBRYO SURVIVAL AND HATCHING DATA FOR THE 90-DAY RAINBOW
TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate [†]	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
0	1A	0	-	0	20	-	-
0	2A	0	-	0	20	-	-
0	1B	0	-	0	20	-	-
0	2B	0	-	0	20	-	-
1	1A	0	-	0	20	-	-
1	2A	0	-	0	20	-	-
1	1B	0	-	0	20	-	-
1	2B	0	-	0	20	-	-
2	1A	0	-	0	20	-	-
2	2A	0	-	0	20	-	-
2	1B	0	-	0	20	-	-
2	2B	0	-	0	20	-	-
3	1A	0	-	0	20	-	-
3	2A	0	-	0	20	-	-
3	1B	0	-	0	20	-	-
3	2B	0	-	0	20	-	-
4	1A	0	-	0	20	-	-
4	2A	0	-	0	20	-	-
4	1B	0	-	0	20	-	-
4	2B	0	-	0	20	-	-
5	1A	0	-	0	20	-	-
5	2A	0	-	0	20	-	-
5	1B	0	-	0	20	-	-
5	2B	0	-	0	20	-	-
6	1A	0	-	0	20	-	-
6	2A	0	-	0	20	-	-
6	1B	0	-	0	20	-	-
6	2B	0	-	0	20	-	-
7	1A	0	-	0	20	-	-
7	2A	0	-	0	20	-	-
7	1B	0	-	0	20	-	-
7	2B	0	-	0	20	-	-

Company Sanitized. Does not contain TSCA CB

TABLE 12 (Continued)

1.3 mg/L: EMBRYO SURVIVAL AND HATCHING DATA FOR THE 90-DAY RAINBOW
TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate [†]	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
8	1A	0	-	0	20	-	-
8	2A	1	-	1	19	-	-
8	1B	0	-	0	20	-	-
8	2B	0	-	0	20	-	-
9	1A	0	-	0	20	-	-
9	2A	0	-	1	19	-	-
9	1B	0	-	0	20	-	-
9	2B	0	-	0	20	-	-
10	1A	1	-	1	19	-	-
10	2A	0	-	1	19	-	-
10	1B	1	-	1	19	-	-
10	2B	0	-	0	20	-	-
11	1A	0	-	1	19	-	-
11	2A	0	-	1	19	-	-
11	1B	0	-	1	19	-	-
11	2B	0	-	0	20	-	-
12	1A	0	-	1	19	-	-
12	2A	0	-	1	19	-	-
12	1B	0	-	1	19	-	-
12	2B	0	-	0	20	-	-
13	1A	2	-	3	17	-	-
13	2A	1	-	2	18	-	-
13	1B	2	-	3	17	-	-
13	2B	2	-	2	18	-	-
14	1A	0	-	3	17	-	-
14	2A	0	-	2	18	-	-
14	1B	0	-	3	17	-	-
14	2B	0	-	2	18	-	-
15	1A	0	-	3	17	-	-
15	2A	0	-	2	18	-	-
15	1B	0	-	3	17	-	-
15	2B	0	-	2	18	-	-

Company Sanitized. Does not contain TSCA CBI

TABLE 12 (Continued)

1.3 mg/L: EMBRYO SURVIVAL AND HATCHING DATA FOR THE 90-DAY RAINBOW
TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate [†]	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
16	1A	0	-	3	17	-	-
16	2A	0	-	2	18	-	-
16	1B	0	-	3	17	-	-
16	2B	0	-	2	18	-	-
17	1A	0	-	3	17	-	-
17	2A	0	-	2	18	-	-
17	1B	0	-	3	17	-	-
17	2B	0	-	2	18	-	-
18	1A	0	-	3	17	-	-
18	2A	0	-	2	18	-	-
18	1B	0	-	3	17	-	-
18	2B	0	-	2	18	-	-
19	1A	0	-	3	17	-	-
19	2A	0	-	2	18	-	-
19	1B	0	-	3	17	-	-
19	2B	0	-	2	18	-	-
20	1A	0	-	3	17	-	-
20	2A	0	-	2	18	-	-
20	1B	0	-	3	17	-	-
20	2B	0	-	2	18	-	-
21	1A	0	-	3	17	-	-
21	2A	0	-	2	18	-	-
21	1B	0	-	3	17	-	-
21	2B	0	-	2	18	-	-
22	1A	0	-	3	17	-	-
22	2A	0	-	2	18	-	-
22	1B	0	-	3	17	-	-
22	2B	0	-	2	18	-	-
23	1A	0	-	3	17	-	-
23	2A	0	-	2	18	-	-
23	1B	0	-	3	17	-	-
23	2B	0	-	2	18	-	-

Company Sanitized. Does not contain TSCA CBI

TABLE 12 (Continued)

1.3 mg/L: EMBRYO SURVIVAL AND HATCHING DATA FOR THE 90-DAY RAINBOW
TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate [†]	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
24	1A	0	-	3	17	-	-
24	2A	0	-	2	18	-	-
24	1B	0	-	3	17	-	-
24	2B	0	-	2	18	-	-
25	1A	0	0	3	17	0	0
25	2A	0	0	2	17	0	1 ^{a,d}
25	1B	0	0	3	16	0	1 ^{a,d}
25	2B	0	0	2	17	0	1
26	1A	0	0	3	9	0	8
26	2A	0	0	2	9	0	9 ^{1a,d}
26	1B	0	0	3	11	0	6 ^{1a,d}
26	2B	0	0	2	8	0	10
27	1A	0	0	3	1	0	16
27	2A	0	0	2	0	0	18 ^{1a,d}
27	1B	0	0	3	0	0	17 ^{1a,d}
27	2B	0	0	2	0	0	18
28	1A	0	0	3	1	0	16
28	2A	0	0	2	0	0	18 ^{1a,d}
28	1B	0	0	3	0	0	17 ^{1a,d}
28	2B	0	0	2	0	0	18
29	1A	0	0	3	0	0	17
29	2A	0	0	2	0	0	18 ^{1a,d}
29	1B	0	0	3	0	0	17 ^{1a,d}
29	2B	0	0	2	0	0	18
30	1A	0	0	3	0	0	17
30	2A	0	0	2	0	0	18 ^{1a,d}
30	1B	0	0	3	0	0	17 ^{1a,d}
30	2B	0	0	2	0	0	18
31	1A	0	0	3	0	0	17 ^{1b,d}
31	2A	0	0	2	0	0	18 ^{1a,d}
31	1B	0	1	3	0	1	16
31	2B	0	0	2	0	0	18

TABLE 12 (Continued)

1.3 mg/L: EMBRYO SURVIVAL AND HATCHING DATA FOR THE 90-DAY RAINBOW
TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate [†]	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
32	1A	0	0	3	0	0	17 ^{1b,d}
32	2A	0	0	2	0	0	18 ^{1a,d}
32	1B	0	0	3	0	1	16
32	2B	0	0	2	0	0	18
33	1A	0	0	3	0	0	17 ^{1b,d}
33	2A	0	0	2	0	0	18 ^{1a,b,d}
33	1B	0	0	3	0	1	16
33	2B	0	0	2	0	0	18
34	1A	0	0	3	0	0	17 ^{1b,d}
34	2A	0	0	2	0	0	18 ^{1a,b,d}
34	1B	0	0	3	0	1	16
34	2B	0	0	2	0	0	18
35	1A	0	0	3	0	0	17 ^{1b,d}
35	2A	0	0	2	0	0	18 ^{1a,b,d}
35	1B	0	0	3	0	1	16
35	2B	0	0	2	0	0	18
36	1A	0	0	3	0	0	17 ^{1b,d}
36	2A	0	0	2	0	0	18 ^{1a,b,d}
36	1B	0	0	3	0	1	16
36	2B	0	0	2	0	0	18
37	1A	0	0	3	0	0	17 ^{1b,d}
37	2A	0	0	2	0	0	18 ^{1a,b,d}
37	1B	0	0	3	0	1	16
37	2B	0	0	2	0	0	18
38	1A	0	0	3	0	0	17 ^{1b,d}
38	2A	0	1	2	0	1	17
38	1B	0	0	3	0	1	16
38	2B	0	0	2	0	0	18
39	1A	0	0	3	0	0	17 ^{1b,d}
39	2A	0	0	2	0	1	17
39	1B	0	0	3	0	1	16
39	2B	0	0	2	0	0	18

Company Sanitized. Does not contain TSCA CBI

TABLE 12 (Continued)

1.3 mg/L: EMBRYO SURVIVAL AND HATCHING DATA FOR THE 90-DAY RAINBOW
TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate †	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
40	1A	0	0	3	0	0	17 ^{1b,d}
40	2A	0	0	2	0	1	17
40	1B	0	0	3	0	1	16
40	2B	0	0	2	0	0	18
41	1A	0	0	3	0	0	17 ^{1b,d}
41	2A	0	0	2	0	1	17
41	1B	0	0	3	0	1	16
41	2B	0	0	2	0	0	18
42	1A	0	1	3	0	1	16
42	2A	0	0	2	0	1	17
42	1B	0	0	3	0	1	16
42	2B	0	0	2	0	0	18
43	1A	0	0	3	0	1	16
43	2A	0	0	2	0	1	17
43	1B	0	0	3	0	1	16
43	2B	0	0	2	0	0	18
44	1A	0	0	3	0	1	16
44	2A	0	0	2	0	1	17
44	1B	0	0	3	0	1	16
44	2B	0	0	2	0	0	18
45	1A	0	0	3	0	1	16
45	2A	0	0	2	0	1	17
45	1B	0	0	3	0	1	16
45	2B	0	0	2	0	0	18

† Four replicates per concentration (i.e., 1A - 2B).

Ψ Dash (-) denotes no data available.

a Scoliosis

b Pale in color

d Small in size

Company Sanitized. Does not contain TSCA CBI

TABLE 13

2.5 mg/L: EMBRYO SURVIVAL AND HATCHING DATA FOR THE 90-DAY RAINBOW
TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate [†]	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
0	1A	0	-	0	20	-	-
0	2A	0	-	0	20	-	-
0	1B	0	-	0	20	-	-
0	2B	0	-	0	20	-	-
1	1A	0	-	0	20	-	-
1	2A	0	-	0	20	-	-
1	1B	0	-	0	20	-	-
1	2B	0	-	0	20	-	-
2	1A	0	-	0	20	-	-
2	2A	0	-	0	20	-	-
2	1B	0	-	0	20	-	-
2	2B	0	-	0	20	-	-
3	1A	0	-	0	20	-	-
3	2A	0	-	0	20	-	-
3	1B	0	-	0	20	-	-
3	2B	0	-	0	20	-	-
4	1A	0	-	0	20	-	-
4	2A	0	-	0	20	-	-
4	1B	0	-	0	20	-	-
4	2B	0	-	0	20	-	-
5	1A	0	-	0	20	-	-
5	2A	0	-	0	20	-	-
5	1B	0	-	0	20	-	-
5	2B	0	-	0	20	-	-
6	1A	0	-	0	20	-	-
6	2A	0	-	0	20	-	-
6	1B	0	-	0	20	-	-
6	2B	0	-	0	20	-	-
7	1A	0	-	0	20	-	-
7	2A	0	-	0	20	-	-
7	1B	0	-	0	20	-	-
7	2B	0	-	0	20	-	-

Company Sanitized. Does not contain TSCA CBI

TABLE 13 (Continued)

2.5 mg/L: EMBRYO SURVIVAL AND HATCHING DATA FOR THE 90-DAY RAINBOW
TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate [†]	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
8	1A	0	-	0	20	-	-
8	2A	0	-	0	20	-	-
8	1B	0	-	0	20	-	-
8	2B	0	-	0	20	-	-
9	1A	0	-	0	20	-	-
9	2A	0	-	0	20	-	-
9	1B	0	-	0	20	-	-
9	2B	1	-	1	19	-	-
10	1A	0	-	0	20	-	-
10	2A	0	-	0	20	-	-
10	1B	0	-	0	20	-	-
10	2B	0	-	1	19	-	-
11	1A	0	-	0	20	-	-
11	2A	0	-	0	20	-	-
11	1B	0	-	0	20	-	-
11	2B	0	-	1	19	-	-
12	1A	0	-	0	20	-	-
12	2A	0	-	0	20	-	-
12	1B	0	-	0	20	-	-
12	2B	0	-	1	19	-	-
13	1A	3	-	3	17	-	-
13	2A	1	-	1	19	-	-
13	1B	1	-	1	19	-	-
13	2B	1	-	2	18	-	-
14	1A	0	-	3	17	-	-
14	2A	0	-	1	19	-	-
14	1B	0	-	1	19	-	-
14	2B	0	-	2	18	-	-
15	1A	0	-	3	17	-	-
15	2A	0	-	1	19	-	-
15	1B	0	-	1	19	-	-
15	2B	0	-	2	18	-	-

Company Sanitized. Does not contain TSCA CBI

TABLE 13 (Continued)

2.5 mg/L: EMBRYO SURVIVAL AND HATCHING DATA FOR THE 90-DAY RAINBOW
TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate [†]	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
16	1A	0	-	3	17	-	-
16	2A	0	-	1	19	-	-
16	1B	0	-	1	19	-	-
16	2B	0	-	2	18	-	-
17	1A	0	-	3	17	-	-
17	2A	0	-	1	19	-	-
17	1B	0	-	1	19	-	-
17	2B	0	-	2	18	-	-
18	1A	0	-	3	17	-	-
18	2A	0	-	1	19	-	-
18	1B	0	-	1	19	-	-
18	2B	0	-	2	18	-	-
19	1A	0	-	3	17	-	-
19	2A	0	-	1	19	-	-
19	1B	0	-	1	19	-	-
19	2B	0	-	2	18	-	-
20	1A	0	-	3	17	-	-
20	2A	0	-	1	19	-	-
20	1B	0	-	1	19	-	-
20	2B	0	-	2	18	-	-
21	1A	0	-	3	17	-	-
21	2A	0	-	1	19	-	-
21	1B	0	-	1	19	-	-
21	2B	0	-	2	18	-	-
22	1A	0	-	3	17	-	-
22	2A	0	-	1	19	-	-
22	1B	0	-	1	19	-	-
22	2B	0	-	2	18	-	-
23	1A	0	-	3	17	-	-
23	2A	0	-	1	19	-	-
23	1B	0	-	1	19	-	-
23	2B	0	-	2	18	-	-

Company Sanitized. Does not contain TSCA CBI

TABLE 13 (Continued)

2.5 mg/L: EMBRYO SURVIVAL AND HATCHING DATA FOR THE 90-DAY RAINBOW
TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate [†]	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
24	1A	0	-	3	17	-	-
24	2A	0	-	1	19	-	-
24	1B	0	-	1	19	-	-
24	2B	0	-	2	18	-	-
25	1A	0	0	3	17	0	0
25	2A	0	0	1	19	0	0
25	1B	0	0	1	19	0	0
25	2B	0	0	2	16	0	2
26	1A	0	0	3	12	0	5
26	2A	0	0	1	18	0	1
26	1B	0	0	1	13	0	6
26	2B	0	0	2	9	0	9
27	1A	0	0	3	1	0	16
27	2A	0	0	1	1	0	18
27	1B	0	0	1	1	0	18
27	2B	0	0	2	2	0	16
28	1A	0	0	3	1	0	16
28	2A	0	0	1	0	0	19
28	1B	0	0	1	0	0	19
28	2B	1	0	3	0	0	17
29	1A	0	0	3	0	0	17
29	2A	0	0	1	0	0	19
29	1B	0	0	1	0	0	19
29	2B	0	0	3	0	0	17
30	1A	0	0	3	0	0	17
30	2A	0	0	1	0	0	19
30	1B	0	0	1	0	0	19
30	2B	0	0	3	0	0	17
31	1A	0	0	3	0	0	17
31	2A	0	0	1	0	0	19
31	1B	0	0	1	0	0	19
31	2B	0	0	3	0	0	17

Company Sanitized. Does not contain TSCA CBI

TABLE 13 (Continued)

2.5 mg/L: EMBRYO SURVIVAL AND HATCHING DATA FOR THE 90-DAY RAINBOW
TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate [†]	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
32	1A	0	0	3	0	0	17
32	2A	0	0	1	0	0	19
32	1B	0	0	1	0	0	19
32	2B	0	0	3	0	0	17
33	1A	0	0	3	0	0	17
33	2A	0	0	1	0	0	19
33	1B	0	0	1	0	0	19
33	2B	0	0	3	0	0	17
34	1A	0	0	3	0	0	17
34	2A	0	0	1	0	0	19
34	1B	0	0	1	0	0	19
34	2B	0	0	3	0	0	17
35	1A	0	0	3	0	0	17
35	2A	0	0	1	0	0	19
35	1B	0	0	1	0	0	19
35	2B	0	0	3	0	0	17
36	1A	0	0	3	0	0	17
36	2A	0	0	1	0	0	19
36	1B	0	0	1	0	0	19
36	2B	0	0	3	0	0	17
37	1A	0	0	3	0	0	17
37	2A	0	0	1	0	0	19
37	1B	0	0	1	0	0	19
37	2B	0	0	3	0	0	17
38	1A	0	0	3	0	0	17
38	2A	0	0	1	0	0	19
38	1B	0	0	1	0	0	19
38	2B	0	0	3	0	0	17
39	1A	0	0	3	0	0	17
39	2A	0	0	1	0	0	19
39	1B	0	0	1	0	0	19
39	2B	0	0	3	0	0	17

Company Sanitized. Does not contain TSCA CBI

TABLE 13 (Continued)

2.5 mg/L: EMBRYO SURVIVAL AND HATCHING DATA FOR THE 90-DAY RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate †	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
40	1A	0	0	3	0	0	17
40	2A	0	0	1	0	0	19
40	1B	0	0	1	0	0	19
40	2B	0	0	3	0	0	17
41	1A	0	0	3	0	0	17
41	2A	0	0	1	0	0	19
41	1B	0	0	1	0	0	19
41	2B	0	0	3	0	0	17
42	1A	0	0	3	0	0	17
42	2A	0	0	1	0	0	19
42	1B	0	0	1	0	0	19
42	2B	0	0	3	0	0	17
43	1A	0	0	3	0	0	17
43	2A	0	0	1	0	0	19
43	1B	0	0	1	0	0	19
43	2B	0	0	3	0	0	17
44	1A	0	0	3	0	0	17
44	2A	0	0	1	0	0	19
44	1B	0	0	1	0	0	19
44	2B	0	0	3	0	0	17
45	1A	0	0	3	0	0	17
45	2A	0	0	1	0	0	19
45	1B	0	0	1	0	0	19
45	2B	0	0	3	0	0	17

† Four replicates per concentration (i.e., 1A - 2B).

Ψ Dash (-) denotes no data available.

Company Sanitized. Does not contain TSCA CBI

TABLE 14

5 mg/L: EMBRYO SURVIVAL AND HATCHING DATA FOR THE 90-DAY RAINBOW
TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate †	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
0	1A	0	-	0	20	-	-
0	2A	0	-	0	20	-	-
0	1B	0	-	0	20	-	-
0	2B	0	-	0	20	-	-
1	1A	0	-	0	20	-	-
1	2A	0	-	0	20	-	-
1	1B	0	-	0	20	-	-
1	2B	0	-	0	20	-	-
2	1A	0	-	0	20	-	-
2	2A	0	-	0	20	-	-
2	1B	0	-	0	20	-	-
2	2B	0	-	0	20	-	-
3	1A	0	-	0	20	-	-
3	2A	0	-	0	20	-	-
3	1B	0	-	0	20	-	-
3	2B	0	-	0	20	-	-
4	1A	0	-	0	20	-	-
4	2A	0	-	0	20	-	-
4	1B	0	-	0	20	-	-
4	2B	0	-	0	20	-	-
5	1A	3	-	3	17	-	-
5	2A	2	-	2	18	-	-
5	1B	1	-	1	19	-	-
5	2B	1	-	1	19	-	-
6	1A	1	-	4	16	-	-
6	2A	1	-	3	17	-	-
6	1B	1	-	2	18	-	-
6	2B	1	-	2	18	-	-
7	1A	0	-	4	16	-	-
7	2A	0	-	3	17	-	-
7	1B	0	-	2	18	-	-
7	2B	0	-	2	18	-	-

Company Sanitized. Does not contain TSCA CBI

TABLE 14 (Continued)

5 mg/L: EMBRYO SURVIVAL AND HATCHING DATA FOR THE 90-DAY RAINBOW
TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate [†]	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
8	1A	0	-	4	16	-	-
8	2A	0	-	3	17	-	-
8	1B	0	-	2	18	-	-
8	2B	0	-	2	18	-	-
9	1A	1	-	5	15	-	-
9	2A	1	-	4	16	-	-
9	1B	1	-	3	17	-	-
9	2B	1	-	3	17	-	-
10	1A	0	-	5	15	-	-
10	2A	0	-	4	16	-	-
10	1B	0	-	3	17	-	-
10	2B	0	-	3	17	-	-
11	1A	0	-	5	15	-	-
11	2A	0	-	4	16	-	-
11	1B	0	-	3	17	-	-
11	2B	0	-	3	17	-	-
12	1A	0	-	5	15	-	-
12	2A	3	-	7	13	-	-
12	1B	2	-	5	15	-	-
12	2B	3	-	6	14	-	-
13	1A	0	-	5	15	-	-
13	2A	1	-	8	12	-	-
13	1B	0	-	5	15	-	-
13	2B	0	-	6	14	-	-
14	1A	0	-	5	15	-	-
14	2A	0	-	8	12	-	-
14	1B	0	-	5	15	-	-
14	2B	0	-	6	14	-	-
15	1A	0	-	5	15	-	-
15	2A	0	-	8	12	-	-
15	1B	0	-	5	15	-	-
15	2B	0	-	6	14	-	-

Company Sanitized. Does not contain TSCA CBI

TABLE 14 (Continued)

5 mg/L: EMBRYO SURVIVAL AND HATCHING DATA FOR THE 90-DAY RAINBOW
TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate [†]	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
16	1A	0	-	5	15	-	-
16	2A	0	-	8	12	-	-
16	1B	0	-	5	15	-	-
16	2B	0	-	6	14	-	-
17	1A	0	-	5	15	-	-
17	2A	0	-	8	12	-	-
17	1B	0	-	5	15	-	-
17	2B	0	-	6	14	-	-
18	1A	0	-	5	15	-	-
18	2A	0	-	8	12	-	-
18	1B	0	-	5	15	-	-
18	2B	0	-	6	14	-	-
19	1A	0	-	5	15	-	-
19	2A	0	-	8	12	-	-
19	1B	0	-	5	15	-	-
19	2B	0	-	6	14	-	-
20	1A	0	-	5	15	-	-
20	2A	0	-	8	12	-	-
20	1B	0	-	5	15	-	-
20	2B	0	-	6	14	-	-
21	1A	0	-	5	15	-	-
21	2A	0	-	8	12	-	-
21	1B	0	-	5	15	-	-
21	2B	0	-	6	14	-	-
22	1A	0	-	5	15	-	-
22	2A	0	-	8	12	-	-
22	1B	0	-	5	15	-	-
22	2B	0	-	6	14	-	-
23	1A	0	-	5	15	-	-
23	2A	0	-	8	12	-	-
23	1B	0	-	5	15	-	-
23	2B	0	-	6	14	-	-

Company Sanitized. Does not contain TSCA CBI

TABLE 14 (Continued)

5 mg/L: EMBRYO SURVIVAL AND HATCHING DATA FOR THE 90-DAY RAINBOW
TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate [†]	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
24	1A	0	-	5	15	-	-
24	2A	0	0	8	11	0	1
24	1B	0	-	5	15	-	-
24	2B	0	-	6	14	-	-
25	1A	0	0	5	15	0	0
25	2A	0	0	8	10	0	2
25	1B	0	0	5	14	0	1
25	2B	0	0	6	14	0	0
26	1A	0	0	5	9	0	6
26	2A	0	0	8	2	0	10
26	1B	0	0	5	8	0	7
26	2B	0	0	6	12	0	2
27	1A	0	0	5	2	0	13
27	2A	0	0	8	0	0	12
27	1B	0	0	5	0	0	15
27	2B	0	0	6	2	0	12
28	1A	0	0	5	1	0	14
28	2A	0	0	8	0	0	12
28	1B	0	0	5	0	0	15
28	2B	0	0	6	0	0	14
29	1A	1	0	6	0	0	14
29	2A	0	0	8	0	0	12
29	1B	0	0	5	0	0	15
29	2B	0	0	6	0	0	14
30	1A	0	0	6	0	0	14
30	2A	0	0	8	0	0	12
30	1B	0	0	5	0	0	15
30	2B	0	0	6	0	0	14
31	1A	0	0	6	0	0	14
31	2A	0	0	8	0	0	12
31	1B	0	0	5	0	0	15
31	2B	0	0	6	0	0	14

Company Sanitized. Does not contain TSCA CBI

TABLE 14 (Continued)

5 mg/L: EMBRYO SURVIVAL AND HATCHING DATA FOR THE 90-DAY RAINBOW
TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate [†]	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
32	1A	0	0	6	0	0	14
32	2A	0	0	8	0	0	12
32	1B	0	0	5	0	0	15
32	2B	0	0	6	0	0	14
33	1A	0	0	6	0	0	14
33	2A	0	0	8	0	0	12
33	1B	0	0	5	0	0	15
33	2B	0	0	6	0	0	14
34	1A	0	0	6	0	0	14
34	2A	0	0	8	0	0	12
34	1B	0	0	5	0	0	15
34	2B	0	0	6	0	0	14
35	1A	0	0	6	0	0	14
35	2A	0	0	8	0	0	12
35	1B	0	0	5	0	0	15
35	2B	0	0	6	0	0	14
36	1A	0	0	6	0	0	14
36	2A	0	0	8	0	0	12
36	1B	0	0	5	0	0	15
36	2B	0	0	6	0	0	14
37	1A	0	0	6	0	0	14
37	2A	0	0	8	0	0	12
37	1B	0	0	5	0	0	15
37	2B	0	0	6	0	0	14
38	1A	0	0	6	0	0	14
38	2A	0	0	8	0	0	12
38	1B	0	0	5	0	0	15
38	2B	0	0	6	0	0	14
39	1A	0	0	6	0	0	14
39	2A	0	0	8	0	0	12
39	1B	0	0	5	0	0	15
39	2B	0	0	6	0	0	14

Company Sanitized. Does not contain TSCA CBI

TABLE 14 (Continued)

5 mg/L: EMBRYO SURVIVAL AND HATCHING DATA FOR THE 90-DAY RAINBOW
TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate [†]	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
40	1A	0	0	6	0	0	14
40	2A	0	0	8	0	0	12
40	1B	0	0	5	0	0	15
40	2B	0	0	6	0	0	14
41	1A	0	0	6	0	0	14
41	2A	0	0	8	0	0	12
41	1B	0	0	5	0	0	15
41	2B	0	0	6	0	0	14
42	1A	0	0	6	0	0	14
42	2A	0	0	8	0	0	12
42	1B	0	0	5	0	0	15
42	2B	0	0	6	0	0	14
43	1A	0	0	6	0	0	14
43	2A	0	0	8	0	0	12
43	1B	0	1	5	0	1	14
43	2B	0	0	6	0	0	14
44	1A	0	0	6	0	0	14
44	2A	0	0	8	0	0	12
44	1B	0	0	5	0	1	14
44	2B	0	0	6	0	0	14
45	1A	0	0	6	0	0	14
45	2A	0	0	8	0	0	12
45	1B	0	0	5	0	1	14
45	2B	0	0	6	0	0	14

[†] Four replicates per concentration (i.e., 1A - 2B).

[‡] Dash (-) denotes no data available.

Company Sanitized. Does not contain TSCA CBI

TABLE 15

10 mg/L: EMBRYO SURVIVAL AND HATCHING DATA FOR THE 90-DAY RAINBOW
TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate [†]	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
0	1A	0	-	0	20	-	-
0	2A	0	-	0	20	-	-
0	1B	0	-	0	20	-	-
0	2B	0	-	0	20	-	-
1	1A	0	-	0	20	-	-
1	2A	0	-	0	20	-	-
1	1B	0	-	0	20	-	-
1	2B	0	-	0	20	-	-
2	1A	0	-	0	20	-	-
2	2A	0	-	0	20	-	-
2	1B	0	-	0	20	-	-
2	2B	0	-	0	20	-	-
3	1A	0	-	0	20	-	-
3	2A	0	-	0	20	-	-
3	1B	0	-	0	20	-	-
3	2B	0	-	0	20	-	-
4	1A	0	-	0	20	-	-
4	2A	0	-	0	20	-	-
4	1B	0	-	0	20	-	-
4	2B	0	-	0	20	-	-
5	1A	0	-	0	20	-	-
5	2A	0	-	0	20	-	-
5	1B	2	-	2	18	-	-
5	2B	4	-	4	16	-	-
6	1A	0	-	0	20	-	-
6	2A	0	-	0	20	-	-
6	1B	0	-	2	18	-	-
6	2B	0	-	4	16	-	-
7	1A	0	-	0	20	-	-
7	2A	0	-	0	20	-	-
7	1B	0	-	2	18	-	-
7	2B	0	-	4	16	-	-

Company Sanitized. Does not contain TSCA CBI

TABLE 15 (Continued)

10 mg/L: EMBRYO SURVIVAL AND HATCHING DATA FOR THE 90-DAY RAINBOW
TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate †	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
8	1A	0	-	0	20	-	-
8	2A	0	-	0	20	-	-
8	1B	0	-	2	18	-	-
8	2B	0	-	4	16	-	-
9	1A	0	-	0	20	-	-
9	2A	0	-	0	20	-	-
9	1B	1	-	3	17	-	-
9	2B	0	-	4	16	-	-
10	1A	0	-	0	20	-	-
10	2A	0	-	0	20	-	-
10	1B	0	-	3	17	-	-
10	2B	0	-	4	16	-	-
11	1A	0	-	0	20	-	-
11	2A	0	-	0	20	-	-
11	1B	0	-	3	17	-	-
11	2B	0	-	4	16	-	-
12	1A	2	-	2	18	-	-
12	2A	5	-	5	15	-	-
12	1B	2	-	5	15	-	-
12	2B	2	-	6	14	-	-
13	1A	0	-	2	18	-	-
13	2A	0	-	5	15	-	-
13	1B	0	-	5	15	-	-
13	2B	0	-	6	14	-	-
14	1A	0	-	2	18	-	-
14	2A	0	-	5	15	-	-
14	1B	0	-	5	15	-	-
14	2B	0	-	6	14	-	-
15	1A	1	-	3	17	-	-
15	2A	0	-	5	15	-	-
15	1B	0	-	5	15	-	-
15	2B	0	-	6	14	-	-

Company Sanitized. Does not contain TSCA CBI

TABLE 15 (Continued)

10 mg/L: EMBRYO SURVIVAL AND HATCHING DATA FOR THE 90-DAY RAINBOW
TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate [†]	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
16	1A	0	-	3	17	-	-
16	2A	0	-	5	15	-	-
16	1B	0	-	5	15	-	-
16	2B	0	-	6	14	-	-
17	1A	0	-	3	17	-	-
17	2A	0	-	5	15	-	-
17	1B	0	-	5	15	-	-
17	2B	0	-	6	14	-	-
18	1A	0	-	3	17	-	-
18	2A	0	-	5	15	-	-
18	1B	0	-	5	15	-	-
18	2B	0	-	6	14	-	-
19	1A	0	-	3	17	-	-
19	2A	0	-	5	15	-	-
19	1B	0	-	5	15	-	-
19	2B	0	-	6	14	-	-
20	1A	0	-	3	17	-	-
20	2A	0	-	5	15	-	-
20	1B	0	-	5	15	-	-
20	2B	0	-	6	14	-	-
21	1A	0	-	3	17	-	-
21	2A	0	-	5	15	-	-
21	1B	0	-	5	15	-	-
21	2B	0	-	6	14	-	-
22	1A	0	-	3	17	-	-
22	2A	0	-	5	15	-	-
22	1B	0	-	5	15	-	-
22	2B	0	-	6	14	-	-
23	1A	0	-	3	17	-	-
23	2A	0	-	5	15	-	-
23	1B	0	-	5	15	-	-
23	2B	0	-	6	14	-	-

Company Sanitized. Does not contain TSCA CBI

TABLE 15 (Continued)

10 mg/L: EMBRYO SURVIVAL AND HATCHING DATA FOR THE 90-DAY RAINBOW
TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate [†]	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
24	1A	0	-	3	17	-	-
24	2A	0	-	5	15	-	-
24	1B	0	-	5	15	-	-
24	2B	0	-	6	14	-	-
25	1A	0	0	3	16	0	1
25	2A	0	0	5	15	0	0
25	1B	0	0	5	14	0	1
25	2B	0	0	6	13	0	1 ^a
26	1A	0	0	3	7	0	10
26	2A	0	0	5	4	0	11
26	1B	0	0	5	9	0	6
26	2B	0	0	6	8	0	6
27	1A	0	0	3	1	0	16
27	2A	0	0	5	0	0	15
27	1B	0	0	5	1	0	14
27	2B	0	0	6	0	0	14
28	1A	0	0	3	1	0	16
28	2A	0	0	5	0	0	15
28	1B	1	0	6	0	0	14
28	2B	0	0	6	0	0	14
29	1A	1	0	4	0	0	16
29	2A	0	0	5	0	0	15
29	1B	0	0	6	0	0	14
29	2B	0	0	6	0	0	14
30	1A	0	0	4	0	0	16
30	2A	0	0	5	0	0	15
30	1B	0	0	5	0	0	14
30	2B	0	0	6	0	0	14
31	1A	0	1	4	0	1	15
31	2A	0	0	5	0	0	15
31	1B	0	0	6	0	0	14
31	2B	0	0	6	0	0	14

Company Sanitized. Does not contain TSCA CBI

TABLE 15 (Continued)

10 mg/L: EMBRYO SURVIVAL AND HATCHING DATA FOR THE 90-DAY RAINBOW
TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate [†]	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
32	1A	0	0	4	0	1	15
32	2A	0	0	5	0	0	15
32	1B	0	0	6	0	0	14
32	2B	0	0	6	0	0	14 ^{1a,b,d}
33	1A	0	0	4	0	1	15
33	2A	0	0	5	0	0	15
33	1B	0	0	6	0	0	14
33	2B	0	0	6	0	0	14 ^{1a,b,d}
34	1A	0	0	4	0	1	15
34	2A	0	0	5	0	0	15
34	1B	0	0	6	0	0	14
34	2B	0	0	6	0	0	14 ^{1a,b,d}
35	1A	0	0	4	0	1	15
35	2A	0	0	5	0	0	15
35	1B	0	0	6	0	0	14
35	2B	0	0	6	0	0	14 ^{1a,b,d}
36	1A	0	0	4	0	1	15
36	2A	0	0	5	0	0	15
36	1B	0	0	6	0	0	14
36	2B	0	0	6	0	0	14 ^{1a,b,d}
37	1A	0	0	4	0	1	15
37	2A	0	0	5	0	0	15
37	1B	0	0	6	0	0	14
37	2B	0	0	6	0	0	14 ^{1a,b,d}
38	1A	0	0	4	0	1	15
38	2A	0	0	5	0	0	15
38	1B	0	0	6	0	0	14
38	2B	0	0	6	0	0	14 ^{1a,b,d}
39	1A	0	0	4	0	1	15
39	2A	0	0	5	0	0	15
39	1B	0	0	6	0	0	14
39	2B	0	0	6	0	0	14 ^{1a,b,d}

Company Sanitized. Does not contain TSCA CBI

TABLE 15 (Continued)

10 mg/L: EMBRYO SURVIVAL AND HATCHING DATA FOR THE 90-DAY RAINBOW
TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate †	Dead Eggs Removed	Dead Larvae Removed	Cumulative Dead Eggs	Live Eggs Left	Cumulative Dead Larvae	Live Larvae
40	1A	0	0	4	0	1	15
40	2A	0	0	5	0	0	15
40	1B	0	0	6	0	0	14
40	2B	0	1	6	0	1	13
41	1A	0	0	4	0	1	15
41	2A	0	0	5	0	0	15
41	1B	0	0	6	0	0	14
41	2B	0	0	6	0	1	13
42	1A	0	0	4	0	1	15
42	2A	0	0	5	0	0	15
42	1B	0	0	6	0	0	14
42	2B	0	0	6	0	1	13
43	1A	0	0	4	0	1	15
43	2A	0	0	5	0	0	15
43	1B	0	0	6	0	0	14
43	2B	0	0	6	0	1	13
44	1A	0	0	4	0	1	15
44	2A	0	0	5	0	0	15
44	1B	0	0	6	0	0	14
44	2B	0	0	6	0	1	13
45	1A	0	0	4	0	1	15
45	2A	0	0	5	0	0	15
45	1B	0	0	6	0	0	14
45	2B	0	0	6	0	1	13

† Four replicates per concentration (i.e., 1A - 2B).

Ψ Dash (-) denotes no data available.

a Scoliosis

b Pale in color

d Small in size

Company Sanitized. Does not contain TSCA CBI

TABLE 16

DILUTION WATER CONTROL: SWIM-UP DATA FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate	Total Live Larvae	Total Larvae Swimming Up
40	1A	18	3
40	2A	18	1
40	1B	19	2
40	2B	19	4
41	1A	18	5
41	2A	18	5
41	1B	18	6
41	2B	19	7
42	1A	18	8
42	2A	18	6
42	1B	18	8
42	2B	19	7
43	1A	18	9
43	2A	18	8
43	1B	18	8
43	2B	19	7
44	1A	18	9
44	2A	18	8
44	1B	18	8
44	2B	19	7
45	1A	18	12
45	2A	18	10
45	1B	18	11
45	2B	19	13

Company Sanitized. Does not contain TSCA CBI

TABLE 17

IPA CONTROL: SWIM-UP DATA FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate	Total Live Larvae	Total Larvae Swimming Up
40	1A	18	0
40	2A	18	1
40	1B	17	3
40	2B	16	3
41	1A	18	3
41	2A	18	3
41	1B	17	5
41	2B	16	4
42	1A	18	4
42	2A	18	6
42	1B	17	6
42	2B	16	5
43	1A	18	4
43	2A	18	7
43	1B	17	6
43	2B	16	5
44	1A	18	5
44	2A	18	7
44	1B	17	6
44	2B	16	6
45	1A	18	10
45	2A	18	12
45	1B	17	11
45	2B	16	7

Company Sanitized. Does not contain TSCA CBI

TABLE 18

0.63 mg/L: SWIM-UP DATA FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate	Total Live Larvae	Total Larvae Swimming Up
40	1A	16	5
40	2A	15	3
40	1B	18	2
40	2B	17	4
41	1A	16	8
41	2A	15	7
41	1B	18	5
41	2B	17	8
42	1A	16	6
42	2A	15	7
42	1B	18	6
42	2B	17	8
43	1A	16	7
43	2A	15	7
43	1B	18	6
43	2B	17	8
44	1A	16	7
44	2A	15	7
44	1B	18	7
44	2B	17	8
45	1A	16	10
45	2A	15	13
45	1B	18	8
45	2B	17	11

Company Sanitized. Does not contain TSCA CBI

TABLE 19

1.3 mg/L: SWIM-UP DATA FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate	Total	Total Larvae
		Live Larvae	Swimming Up
40	1A	17	2
40	2A	17	3
40	1B	16	4
40	2B	18	6
41	1A	17	4
41	2A	17	5
41	1B	16	4
41	2B	18	6
42	1A	16	7
42	2A	17	8
42	1B	16	8
42	2B	18	6
43	1A	16	7
43	2A	17	8
43	1B	16	8
43	2B	18	7
44	1A	16	7
44	2A	17	8
44	1B	16	8
44	2B	18	8
45	1A	16	11
45	2A	17	11
45	1B	16	9
45	2B	18	10

Company Sanitized. Does not contain TSCA CBI

TABLE 20

2.5 mg/L: SWIM-UP DATA FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate	Total Live Larvae	Total Larvae Swimming Up
40	1A	17	5
40	2A	19	3
40	1B	19	7
40	2B	17	3
41	1A	17	6
41	2A	19	5
41	1B	19	7
41	2B	17	4
42	1A	17	8
42	2A	19	7
42	1B	19	9
42	2B	17	7
43	1A	17	8
43	2A	19	8
43	1B	19	9
43	2B	17	9
44	1A	17	9
44	2A	19	9
44	1B	19	9
44	2B	17	9
45	1A	17	13
45	2A	19	11
45	1B	19	12
45	2B	17	10

Company Sanitized. Does not contain TSCA CBI

TABLE 21

5 mg/L: SWIM-UP DATA FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate	Total Live Larvae	Total Larvae Swimming Up
40	1A	14	4
40	2A	12	4
40	1B	15	5
40	2B	14	4
41	1A	14	6
41	2A	12	4
41	1B	15	6
41	2B	14	6
42	1A	14	6
42	2A	12	4
42	1B	15	8
42	2B	14	7
43	1A	14	7
43	2A	12	4
43	1B	14	8
43	2B	14	7
44	1A	14	7
44	2A	12	4
44	1B	14	8
44	2B	14	7
45	1A	14	7
45	2A	12	7
45	1B	14	9
45	2B	14	8

Company Sanitized. Does not contain TSCA CBI

TABLE 22

10 mg/L: SWIM-UP DATA FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate	Total Live Larvae	Total Larvae Swimming Up
40	1A	15	1
40	2A	15	4
40	1B	14	4
40	2B	13	2
41	1A	15	3
41	2A	15	6
41	1B	14	5
41	2B	13	3
42	1A	15	4
42	2A	15	5
42	1B	14	6
42	2B	13	3
43	1A	15	5
43	2A	15	6
43	1B	14	7
43	2B	13	4
44	1A	15	6
44	2A	15	6
44	1B	14	7
44	2B	13	4
45	1A	15	8
45	2A	15	7
45	1B	14	7
45	2B	13	8

Company Sanitized. Does not contain TSCA CBI

TABLE 23

WATER CONTROL: LARVAL MORTALITY AFTER THINNING FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate	Larvae at Transfer	Dead Larvae Removed	Cumulative Dead Larvae	Live Larvae Remaining
45	A	15	0	0	15
45	B	15	0	0	15
46	A	15	0	0	15
46	B	15	0	0	15
47	A	15	0	0	15
47	B	15	0	0	15
48	A	15	0	0	15
48	B	15	0	0	15
49	A	15	0	0	15
49	B	15	0	0	15
50	A	15	0	0	15
50	B	15	0	0	15
51	A	15	0	0	15
51	B	15	0	0	15
52	A	15	0	0	15
52	B	15	0	0	15
53	A	15	0	0	15
53	B	15	0	0	15
54	A	15	0	0	15
54	B	15	0	0	15
55	A	15	0	0	15
55	B	15	0	0	15
56	A	15	0	0	15
56	B	15	0	0	15
57	A	15	0	0	15
57	B	15	0	0	15
58	A	15	0	0	15
58	B	15	0	0	15
59	A	15	0	0	15
59	B	15	0	0	15
60	A	15	0	0	15
60	B	15	0	0	15

Company Sanitized. Does not contain TSCA CB1

TABLE 23 (Continued)

WATER CONTROL: LARVAL MORTALITY AFTER THINNING FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate	Larvae at Transfer	Dead Larvae Removed	Cumulative Dead Larvae	Live Larvae Remaining
61	A	15	0	0	15
61	B	15	0	0	15
62	A	15	0	0	15
62	B	15	0	0	15
63	A	15	0	0	15
63	B	15	0	0	15
64	A	15	0	0	15
64	B	15	0	0	15
65	A	15	0	0	15
65	B	15	0	0	15
66	A	15	0	0	15
66	B	15	0	0	15
67	A	15	0	0	15
67	B	15	0	0	15
68	A	15	0	0	15
68	B	15	0	0	15
69	A	15	0	0	15
69	B	15	0	0	15
70	A	15	0	0	15
70	B	15	0	0	15
71	A	15	0	0	15
71	B	15	0	0	15
72	A	15	0	0	15
72	B	15	0	0	15
73	A	15	0	0	15
73	B	15	0	0	15
74	A	15	0	0	15
74	B	15	0	0	15
75	A	15	0	0	15
75	B	15	0	0	15
76	A	15	0	0	15
76	B	15	0	0	15

Company Sanitized. Does not contain TSCA CBI

TABLE 23 (Continued)

WATER CONTROL: LARVAL MORTALITY AFTER THINNING FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate	Larvae at Transfer	Dead Larvae Removed	Cumulative Dead Larvae	Live Larvae Remaining
77	A	15	0	0	15
77	B	15	0	0	15
78	A	15	0	0	15
78	B	15	0	0	15
79	A	15	0	0	15
79	B	15	0	0	15
80	A	15	0	0	15
80	B	15	0	0	15
81	A	15	0	0	15
81	B	15	0	0	15
82	A	15	0	0	15
82	B	15	0	0	15
83	A	15	0	0	15
83	B	15	0	0	15
84	A	15	0	0	15
84	B	15	0	0	15
85	A	15	0	0	15
85	B	15	0	0	15
86	A	15	0	0	15
86	B	15	0	0	15
87	A	15	0	0	15
87	B	15	0	0	15
88	A	15	0	0	15
88	B	15	0	0	15
89	A	15	0	0	15
89	B	15	0	0	15
90	A	15	0	0	15
90	B	15	0	0	15

Company Sanitized. Does not contain TSCA CBI

TABLE 24

IPA CONTROL: LARVAL MORTALITY AFTER THINNING FOR THE 90-DAY
RAINBOW TROUT, *ONCORHYNCHUS MYKISS*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate	Larvae at Transfer	Dead Larvae Removed	Cumulative Dead Larvae	Live Larvae Remaining
45	A	15	0	0	15
45	B	15	0	0	15
46	A	15	0	0	15
46	B	15	0	0	15
47	A	15	0	0	15
47	B	15	0	0	15
48	A	15	0	0	15
48	B	15	0	0	15
49	A	15	0	0	15
49	B	15	0	0	15
50	A	15	0	0	15
50	B	15	0	0	15
51	A	15	0	0	15
51	B	15	0	0	15
52	A	15	0	0	15
52	B	15	0	0	15
53	A	15	0	0	15
53	B	15	0	0	15
54	A	15	0	0	15
54	B	15	0	0	15
55	A	15	0	0	15
55	B	15	0	0	15
56	A	15	0	0	15
56	B	15	0	0	15
57	A	15	0	0	15
57	B	15	0	0	15
58	A	15	0	0	15
58	B	15	0	0	15
59	A	15	0	0	15
59	B	15	0	0	15
60	A	15	0	0	15
60	B	15	0	0	15

Company Sanitized. Does not contain TSCA CBI

TABLE 24 (Continued)

IPA CONTROL: LARVAL MORTALITY AFTER THINNING FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate	Larvae at Transfer	Dead Larvae Removed	Cumulative Dead Larvae	Live Larvae Remaining
61	A	15	0	0	15
61	B	15	0	0	15
62	A	15	0	0	15
62	B	15	0	0	15
63	A	15	0	0	15
63	B	15	0	0	15
64	A	15	0	0	15
64	B	15	0	0	15
65	A	15	0	0	15
65	B	15	0	0	15
66	A	15	0	0	15
66	B	15	0	0	15
67	A	15	0	0	15
67	B	15	0	0	15
68	A	15	0	0	15
68	B	15	0	0	15
69	A	15	0	0	15
69	B	15	0	0	15
70	A	15	0	0	15
70	B	15	0	0	15
71	A	15	0	0	15
71	B	15	0	0	15
72	A	15	0	0	15
72	B	15	0	0	15
73	A	15	0	0	15
73	B	15	0	0	15
74	A	15	0	0	15
74	B	15	0	0	15
75	A	15	0	0	15
75	B	15	0	0	15
76	A	15	0	0	15
76	B	15	0	0	15

Company Sanitized. Does not contain TSCA CBI

TABLE 24 (Continued)

IPA CONTROL: LARVAL MORTALITY AFTER THINNING FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate	Larvae at Transfer	Dead Larvae Removed	Cumulative Dead Larvae	Live Larvae Remaining
77	A	15	0	0	15
77	B	15	0	0	15
78	A	15	0	0	15
78	B	15	0	0	15
79	A	15	0	0	15
79	B	15	0	0	15
80	A	15	0	0	15
80	B	15	0	0	15
81	A	15	0	0	15
81	B	15	0	0	15
82	A	15	0	0	15
82	B	15	0	0	15
83	A	15	0	0	15
83	B	15	0	0	15
84	A	15	0	0	15
84	B	15	0	0	15
85	A	15	0	0	15
85	B	15	0	0	15
86	A	15	0	0	15
86	B	15	0	0	15
87	A	15	0	0	15
87	B	15	0	0	15
88	A	15	0	0	15
88	B	15	0	0	15
89	A	15	0	0	15
89	B	15	0	0	15
90	A	15	0	0	15
90	B	15	0	0	15

TABLE 25

0.63 mg/L: LARVAL MORTALITY AFTER THINNING FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate	Larvae at Transfer	Dead Larvae Removed	Cumulative Dead Larvae	Live Larvae Remaining
45	A	15	0	0	15
45	B	15	0	0	15
46	A	15	0	0	15
46	B	15	0	0	15
47	A	15	0	0	15
47	B	15	0	0	15
48	A	15	0	0	15
48	B	15	0	0	15
49	A	15	0	0	15
49	B	15	0	0	15
50	A	15	0	0	15
50	B	15	0	0	15
51	A	15	0	0	15
51	B	15	0	0	15
52	A	15	0	0	15
52	B	15	0	0	15
53	A	15	0	0	15
53	B	15	0	0	15
54	A	15	0	0	15
54	B	15	0	0	15
55	A	15	0	0	15
55	B	15	0	0	15
56	A	15	0	0	15
56	B	15	0	0	15
57	A	15	0	0	15
57	B	15	0	0	15
58	A	15	0	0	15
58	B	15	0	0	15
59	A	15	0	0	15
59	B	15	0	0	15
60	A	15	0	0	15
60	B	15	0	0	15

Company Sanitized. Does not contain TSCA CBI

TABLE 25 (Continued)

0.63 mg/L: LARVAL MORTALITY AFTER THINNING FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate	Larvae at Transfer	Dead Larvae Removed	Cumulative Dead Larvae	Live Larvae Remaining
61	A	15	0	0	15
61	B	15	0	0	15
62	A	15	0	0	15
62	B	15	0	0	15
63	A	15	0	0	15
63	B	15	0	0	15
64	A	15	0	0	15
64	B	15	0	0	15
65	A	15	0	0	15
65	B	15	0	0	15
66	A	15	0	0	15
66	B	15	0	0	15
67	A	15	0	0	15
67	B	15	0	0	15
68	A	15	0	0	15
68	B	15	0	0	15
69	A	15	0	0	15
69	B	15	0	0	15
70	A	15	0	0	15
70	B	15	0	0	15
71	A	15	0	0	15
71	B	15	0	0	15
72	A	15	0	0	15
72	B	15	0	0	15
73	A	15	0	0	15
73	B	15	0	0	15
74	A	15	0	0	15
74	B	15	0	0	15
75	A	15	0	0	15
75	B	15	0	0	15
76	A	15	0	0	15
76	B	15	0	0	15

Company Sanitized. Does not contain TSCA CBI

TABLE 25 (Continued)

0.63 mg/L: LARVAL MORTALITY AFTER THINNING FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate	Larvae at Transfer	Dead Larvae Removed	Cumulative Dead Larvae	Live Larvae Remaining
77	A	15	0	0	15
77	B	15	0	0	15
78	A	15	0	0	15
78	B	15	0	0	15
79	A	15	0	0	15
79	B	15	0	0	15
80	A	15	0	0	15
80	B	15	0	0	15
81	A	15	0	0	15 ^{1d}
81	B	15	0	0	15
82	A	15	0	0	15 ^{1d}
82	B	15	0	0	15
83	A	15	0	0	15 ^{1d}
83	B	15	0	0	15
84	A	15	0	0	15 ^{1d}
84	B	15	0	0	15
85	A	15	0	0	15 ^{1d}
85	B	15	0	0	15
86	A	15	0	0	15 ^{1d}
86	B	15	0	0	15
87	A	15	0	0	15 ^{1d}
87	B	15	0	0	15
88	A	15	0	0	15 ^{1d}
88	B	15	0	0	15
89	A	15	0	0	15 ^{1d}
89	B	15	0	0	15
90	A	15	0	0	15 ^{1d}
90	B	15	0	0	15

Company Sanitized. Does not contain TSCA CBI

TABLE 26

1.3 mg/L: LARVAL MORTALITY AFTER THINNING FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate	Larvae at Transfer	Dead Larvae Removed	Cumulative Dead Larvae	Live Larvae Remaining
45	A	15	0	0	15
45	B	15	0	0	15
46	A	15	0	0	15
46	B	15	0	0	15
47	A	15	0	0	15
47	B	15	0	0	15
48	A	15	0	0	15
48	B	15	0	0	15
49	A	15	0	0	15
49	B	15	0	0	15
50	A	15	0	0	15
50	B	15	0	0	15
51	A	15	0	0	15
51	B	15	0	0	15
52	A	15	0	0	15
52	B	15	0	0	15 ^{1d}
53	A	15	0	0	15
53	B	15	0	0	15 ^{1d}
54	A	15	0	0	15
54	B	15	0	0	15 ^{1d}
55	A	15	0	0	15
55	B	15	0	0	15 ^{1d}
56	A	15	0	0	15
56	B	15	0	0	15 ^{1d}
57	A	15	0	0	15
57	B	15	0	0	15 ^{1d}
58	A	15	0	0	15
58	B	15	0	0	15 ^{1d}
59	A	15	0	0	15
59	B	15	0	0	15 ^{1d}
60	A	15	0	0	15
60	B	15	0	0	15 ^{1d}

Company Sanitized. Does not contain TSCA CBI

TABLE 26 (Continued)

1.3 mg/L: LARVAL MORTALITY AFTER THINNING FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate	Larvae at Transfer	Dead Larvae Removed	Cumulative Dead Larvae	Live Larvae Remaining
61	A	15	0	0	15
61	B	15	0	0	15 ^{ld}
62	A	15	0	0	15
62	B	15	0	0	15 ^{ld}
63	A	15	0	0	15
63	B	15	0	0	15 ^{ld}
64	A	15	0	0	15
64	B	15	0	0	15 ^{ld}
65	A	15	0	0	15
65	B	15	0	0	15 ^{ld}
66	A	15	0	0	15
66	B	15	0	0	15 ^{ld}
67	A	15	0	0	15
67	B	15	0	0	15 ^{ld}
68	A	15	0	0	15
68	B	15	0	0	15 ^{ld}
69	A	15	0	0	15
69	B	15	0	0	15 ^{ld}
70	A	15	0	0	15
70	B	15	0	0	15 ^{ld}
71	A	15	0	0	15
71	B	15	0	0	15 ^{ld}
72	A	15	0	0	15
72	B	15	0	0	15 ^{ld}
73	A	15	0	0	15
73	B	15	0	0	15 ^{ld}
74	A	15	0	0	15
74	B	15	0	0	15 ^{ld}
75	A	15	0	0	15
75	B	15	0	0	15 ^{ld}
76	A	15	0	0	15
76	B	15	0	0	15 ^{ld}

Company Sanitized. Does not contain TSCA CBI

TABLE 26 (Continued)

1.3 mg/L: LARVAL MORTALITY AFTER THINNING FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate	Larvae at Transfer	Dead Larvae Removed	Cumulative Dead Larvae	Live Larvae Remaining
77	A	15	0	0	15
77	B	15	0	0	15 ^{1d}
78	A	15	0	0	15
78	B	15	0	0	15 ^{1d}
79	A	15	0	0	15
79	B	15	0	0	15 ^{1d}
80	A	15	0	0	15
80	B	15	0	0	15 ^{1d}
81	A	15	0	0	15
81	B	15	0	0	15 ^{1d}
82	A	15	0	0	15
82	B	15	0	0	15 ^{1d}
83	A	15	0	0	15
83	B	15	0	0	15 ^{1d}
84	A	15	0	0	15
84	B	15	0	0	15 ^{1d}
85	A	15	0	0	15
85	B	15	0	0	15 ^{1d}
86	A	15	0	0	15
86	B	15	0	0	15 ^{1d}
87	A	15	0	0	15
87	B	15	0	0	15 ^{1d}
88	A	15	0	0	15
88	B	15	0	0	15 ^{1d}
89	A	15	0	0	15
89	B	15	0	0	15 ^{1d}
90	A	15	0	0	15
90	B	15	0	0	15 ^{1d}

Company Sanitized. Does not contain TSCA CBI

TABLE 27

2.5 mg/L: LARVAL MORTALITY AFTER THINNING FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate	Larvae at Transfer	Dead Larvae Removed	Cumulative Dead Larvae	Live Larvae Remaining
45	A	15	0	0	15
45	B	15	0	0	15
46	A	15	0	0	15
46	B	15	0	0	15
47	A	15	0	0	15
47	B	15	0	0	15
48	A	15	0	0	15
48	B	15	0	0	15
49	A	15	0	0	15
49	B	15	0	0	15
50	A	15	0	0	15
50	B	15	0	0	15
51	A	15	0	0	15
51	B	15	0	0	15
52	A	15	0	0	15
52	B	15	0	0	15
53	A	15	0	0	15
53	B	15	0	0	15
54	A	15	0	0	15
54	B	15	0	0	15
55	A	15	0	0	15
55	B	15	0	0	15
56	A	15	0	0	15
56	B	15	0	0	15
57	A	15	0	0	15
57	B	15	0	0	15
58	A	15	0	0	15
58	B	15	0	0	15
59	A	15	0	0	15
59	B	15	0	0	15
60	A	15	0	0	15
60	B	15	0	0	15

Company Sanitized. Does not contain TSCA CBI

TABLE 27 (Continued)

2.5 mg/L: LARVAL MORTALITY AFTER THINNING FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate	Larvae at Transfer	Dead Larvae Removed	Cumulative Dead Larvae	Live Larvae Remaining
61	A	15	0	0	15
61	B	15	0	0	15
62	A	15	0	0	15
62	B	15	0	0	15
63	A	15	0	0	15
63	B	15	0	0	15
64	A	15	0	0	15
64	B	15	0	0	15
65	A	15	0	0	15
65	B	15	0	0	15
66	A	15	0	0	15
66	B	15	0	0	15
67	A	15	0	0	15
67	B	15	0	0	15
68	A	15	0	0	15
68	B	15	0	0	15
69	A	15	0	0	15
69	B	15	0	0	15
70	A	15	0	0	15
70	B	15	0	0	15
71	A	15	0	0	15
71	B	15	0	0	15
72	A	15	0	0	15
72	B	15	0	0	15
73	A	15	0	0	15
73	B	15	0	0	15
74	A	15	0	0	15
74	B	15	0	0	15
75	A	15	0	0	15
75	B	15	0	0	15
76	A	15	0	0	15
76	B	15	0	0	15

Company Sanitized. Does not contain TSCA CBI

TABLE 27 (Continued)

2.5 mg/L: LARVAL MORTALITY AFTER THINNING FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate	Larvae at Transfer	Dead Larvae Removed	Cumulative Dead Larvae	Live Larvae Remaining
77	A	15	0	0	15
77	B	15	0	0	15
78	A	15	0	0	15
78	B	15	0	0	15
79	A	15	0	0	15
79	B	15	0	0	15
80	A	15	0	0	15
80	B	15	0	0	15
81	A	15	0	0	15
81	B	15	0	0	15
82	A	15	0	0	15
82	B	15	0	0	15
83	A	15	0	0	15
83	B	15	0	0	15
84	A	15	0	0	15
84	B	15	0	0	15
85	A	15	0	0	15
85	B	15	0	0	15
86	A	15	0	0	15
86	B	15	0	0	15
87	A	15	0	0	15
87	B	15	0	0	15
88	A	15	0	0	15
88	B	15	0	0	15
89	A	15	0	0	15
89	B	15	0	0	15
90	A	15	0	0	15
90	B	15	0	0	15

Company Sanitized. Does not contain TSCA CBI

TABLE 28

5 mg/L: LARVAL MORTALITY AFTER THINNING FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate	Larvae at Transfer	Dead Larvae Removed	Cumulative Dead Larvae	Live Larvae Remaining
45	A	15	0	0	15
45	B	15	0	0	15
46	A	15	0	0	15
46	B	15	0	0	15
47	A	15	0	0	15
47	B	15	0	0	15
48	A	15	0	0	15
48	B	15	0	0	15
49	A	15	0	0	15
49	B	15	0	0	15
50	A	15	0	0	15
50	B	15	0	0	15
51	A	15	0	0	15
51	B	15	0	0	15
52	A	15	0	0	15
52	B	15	0	0	15
53	A	15	0	0	15
53	B	15	0	0	15
54	A	15	0	0	15
54	B	15	0	0	15
55	A	15	0	0	15
55	B	15	0	0	15
56	A	15	0	0	15
56	B	15	0	0	15
57	A	15	0	0	15
57	B	15	0	0	15
58	A	15	0	0	15
58	B	15	0	0	15
59	A	15	0	0	15
59	B	15	0	0	15
60	A	15	0	0	15
60	B	15	0	0	15

TABLE 28 (Continued)

5 mg/L: LARVAL MORTALITY AFTER THINNING FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate	Larvae at Transfer	Dead Larvae Removed	Cumulative Dead Larvae	Live Larvae Remaining
61	A	15	0	0	15
61	B	15	0	0	15
62	A	15	0	0	15
62	B	15	0	0	15
63	A	15	0	0	15
63	B	15	0	0	15
64	A	15	0	0	15
64	B	15	0	0	15
65	A	15	0	0	15
65	B	15	0	0	15
66	A	15	0	0	15
66	B	15	0	0	15
67	A	15	0	0	15
67	B	15	0	0	15
68	A	15	0	0	15
68	B	15	0	0	15
69	A	15	0	0	15
69	B	15	0	0	15
70	A	15	0	0	15
70	B	15	0	0	15
71	A	15	0	0	15
71	B	15	0	0	15
72	A	15	0	0	15
72	B	15	0	0	15
73	A	15	0	0	15
73	B	15	0	0	15
74	A	15	0	0	15
74	B	15	0	0	15
75	A	15	0	0	15
75	B	15	0	0	15
76	A	15	0	0	15
76	B	15	0	0	15

Company Sanitized. Does not contain TSCA CBI

TABLE 28 (Continued)

5 mg/L: LARVAL MORTALITY AFTER THINNING FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate	Larvae at Transfer	Dead Larvae Removed	Cumulative Dead Larvae	Live Larvae Remaining
77	A	15	0	0	15
77	B	15	0	0	15
78	A	15	0	0	15
78	B	15	0	0	15
79	A	15	0	0	15
79	B	15	0	0	15
80	A	15	0	0	15
80	B	15	0	0	15
81	A	15	0	0	15
81	B	15	0	0	15 ^{1d}
82	A	15	0	0	15
82	B	15	0	0	15 ^{1d}
83	A	15	0	0	15
83	B	15	0	0	15 ^{1d}
84	A	15	0	0	15
84	B	15	0	0	15 ^{1d}
85	A	15	0	0	15
85	B	15	0	0	15 ^{1d}
86	A	15	0	0	15
86	B	15	0	0	15 ^{1d}
87	A	15	0	0	15
87	B	15	0	0	15 ^{1d}
88	A	15	0	0	15
88	B	15	0	0	15 ^{1d}
89	A	15	0	0	15
89	B	15	0	0	15 ^{1d}
90	A	15	0	0	15
90	B	15	0	0	15 ^{1d}

TABLE 29

10 mg/L: LARVAL MORTALITY AFTER THINNING FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate	Larvae at Transfer	Dead Larvae Removed	Cumulative Dead Larvae	Live Larvae Remaining
45	A	15	0	0	15
45	B	15	0	0	15
46	A	15	0	0	15
46	B	15	0	0	15
47	A	15	0	0	15
47	B	15	0	0	15
48	A	15	0	0	15
48	B	15	0	0	15
49	A	15	0	0	15
49	B	15	0	0	15
50	A	15	0	0	15
50	B	15	0	0	15
51	A	15	0	0	15
51	B	15	0	0	15
52	A	15	0	0	15
52	B	15	0	0	15
53	A	15	0	0	15
53	B	15	0	0	15
54	A	15	0	0	15
54	B	15	0	0	15
55	A	15	0	0	15 ^{2d}
55	B	15	0	0	15
56	A	15	0	0	15 ^{2d}
56	B	15	0	0	15
57	A	15	0	0	15 ^{2d}
57	B	15	0	0	15
58	A	15	0	0	15 ^{2d}
58	B	15	0	0	15
59	A	15	0	0	15 ^{2d}
59	B	15	0	0	15
60	A	15	0	0	15 ^{2d}
60	B	15	0	0	15

Company Sanitized. Does not contain TSCA CBI

TABLE 29 (Continued)

10 mg/L: LARVAL MORTALITY AFTER THINNING FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate	Larvae at Transfer	Dead Larvae Removed	Cumulative Dead Larvae	Live Larvae Remaining
61	A	15	0	0	15 ^{2d}
61	B	15	0	0	15
62	A	15	0	0	15 ^{2d}
62	B	15	0	0	15
63	A	15	0	0	15 ^{2d}
63	B	15	0	0	15
64	A	15	0	0	15 ^{2d}
64	B	15	0	0	15
65	A	15	0	0	15 ^{2d}
65	B	15	0	0	15
66	A	15	0	0	15 ^{2d}
66	B	15	0	0	15
67	A	15	0	0	15 ^{2d}
67	B	15	0	0	15
68	A	15	0	0	15 ^{2d}
68	B	15	0	0	15
69	A	15	0	0	15 ^{2d}
69	B	15	0	0	15
70	A	15	0	0	15 ^{2d}
70	B	15	0	0	15
71	A	15	0	0	15 ^{2d}
71	B	15	0	0	15
72	A	15	0	0	15 ^{2d}
72	B	15	0	0	15
73	A	15	0	0	15 ^{3d}
73	B	15	0	0	15
74	A	15	0	0	15 ^{3d}
74	B	15	0	0	15
75	A	15	0	0	15 ^{3d}
75	B	15	0	0	15
76	A	15	0	0	15 ^{3d}
76	B	15	0	0	15

Company Sanitized. Does not contain TSCA CBI

TABLE 29 (Continued)

10 mg/L: LARVAL MORTALITY AFTER THINNING FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Day	Replicate	Larvae at Transfer	Dead Larvae Removed	Cumulative Dead Larvae	Live Larvae Remaining
77	A	15	0	0	15 ^{3d}
77	B	15	0	0	15
78	A	15	0	0	15 ^{3d}
78	B	15	0	0	15
79	A	15	0	0	15 ^{3d}
79	B	15	0	0	15
80	A	15	0	0	15 ^{3d}
80	B	15	0	0	15
81	A	15	0	0	15 ^{3d}
81	B	15	0	0	15
82	A	15	0	0	15 ^{3d}
82	B	15	0	0	15
83	A	15	0	0	15 ^{3d}
83	B	15	0	0	15
84	A	15	0	0	15 ^{3d}
84	B	15	0	0	15
85	A	15	0	0	15 ^{3d}
85	B	15	0	0	15
86	A	15	0	0	15 ^{3d}
86	B	15	0	0	15
87	A	15	0	0	15 ^{3d}
87	B	15	0	12 [†]	3
88	A	15	0	0	15 ^{3d}
88	B	15	0	12 [†]	3
89	A	15	0	0	15 ^{3d}
89	B	15	0	12 [†]	3
90	A	15	0	0	15 ^{3d}
90	B	15	0	12 [†]	3

† Non-test substance related deaths caused by clogged delivery tube and low dissolved oxygen (see Results section).
d Small in size.

Company Sanitized. Does not contain TSCA CBI

TABLE 30

DILUTION WATER CONTROL: FISH LENGTHS AND WEIGHTS
AT TEST CONCLUSION FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Number	Replicate	Standard Length (cm)	Wet Weight (grams)
1	A	4.6	1.4904
2	A	4.4	1.1711
3	A	4.3	1.2471
4	A	4.3	1.0174
5	A	4.4	1.1610
6	A	4.5	1.3020
7	A	4.6	1.2409
8	A	4.4	1.2004
9	A	4.2	0.9793
10	A	5.1	1.9465
11	A	4.3	0.9406
12	A	4.2	1.1231
13	A	4.4	1.2142
14	A	4.6	1.3685
15	A	5.3	2.2767
1	B	4.8	1.3968
2	B	3.8	0.6880
3	B	4.1	1.0628
4	B	4.0	0.9886
5	B	4.6	1.2712
6	B	4.5	1.2043
7	B	5.1	1.6860
8	B	4.5	1.2902
9	B	4.6	1.5201
10	B	4.8	1.4571
11	B	4.9	1.5656
12	B	4.5	1.2401
13	B	5.1	1.8431
14	B	4.7	1.3717
15	B	4.6	1.3117

Company Sanitized. Does not contain TSCA CBI

TABLE 31

IPA CONTROL: FISH LENGTHS AND WEIGHTS
AT TEST CONCLUSION FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Number	Replicate	Standard Length (cm)	Wet Weight (grams)
1	A	3.9	0.8336
2	A	4.5	1.4330
3	A	4.6	1.4479
4	A	4.3	1.0692
5	A	4.6	1.3779
6	A	4.7	1.3918
7	A	4.6	1.3401
8	A	4.7	1.4109
9	A	4.6	1.3379
10	A	4.0	0.8080
11	A	5.1	1.9977
12	A	4.9	1.7902
13	A	3.8	0.7349
14	A	4.0	0.9310
15	A	4.8	1.5750
1	B	4.5	1.4302
2	B	4.1	0.9792
3	B	4.7	1.4042
4	B	4.5	1.2899
5	B	5.0	1.8919
6	B	4.2	1.0669
7	B	4.3	1.1124
8	B	3.6	0.6892
9	B	3.9	0.7861
10	B	4.2	1.1454
11	B	4.1	1.0535
12	B	4.6	1.7020
13	B	4.7	2.0415
14	B	5.1	2.2315
15	B	4.1	1.0868

TABLE 32

0.63 mg/L: FISH LENGTHS AND WEIGHTS
AT TEST CONCLUSION FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Number	Replicate	Standard Length (cm)	Wet Weight (grams)
1	A	4.4	1.2387
2	A	5.2	2.2000
3	A	4.2	1.0761
4	A	4.6	1.2309
5	A	3.5	0.5266
6	A	4.9	1.5784
7	A	4.1	0.9526
8	A	4.6	1.2650
9	A	3.6	0.6087
10	A	4.4	1.2178
11	A	4.6	1.4816
12	A	4.7	1.2987
13	A	4.1	0.9348
14	A	3.8	0.7409
15	A	4.9	1.8104
1	B	3.7	0.7031
2	B	4.4	1.1193
3	B	5.5	2.6870
4	B	4.6	1.4748
5	B	3.9	0.7402
6	B	4.2	1.0595
7	B	4.9	1.8696
8	B	4.3	1.2407
9	B	3.8	0.6960
10	B	3.8	0.8485
11	B	3.8	0.7256
12	B	4.6	1.3516
13	B	5.2	2.0165
14	B	3.9	0.8067
15	B	4.0	0.8609

Company Sanitized. Does not contain TSCA CBI

TABLE 33

1.3 mg/L: FISH LENGTHS AND WEIGHTS
AT TEST CONCLUSION FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Number	Replicate	Standard Length (cm)	Wet Weight (grams)
1	A	4.0	0.8851
2	A	5.3	2.356
3	A	4.6	1.4227
4	A	3.9	0.7065
5	A	4.1	0.8720
6	A	4.0	0.9329
7	A	3.8	0.7177
8	A	3.9	0.7792
9	A	4.3	1.1371
10	A	4.5	1.2410
11	A	4.7	1.5435
12	A	4.4	1.3841
13	A	5.0	1.9045
14	A	3.4	0.5889
15	A	4.2	1.1222
1	B	4.9	1.9323
2	B	4.9	1.6892
3	B	3.0	0.4331
4	B	3.9	0.8553
5	B	3.7	0.8054
6	B	4.8	1.6577
7	B	3.9	0.9217
8	B	4.3	1.3006
9	B	4.3	1.2228
10	B	4.3	1.1386
11	B	4.6	1.2696
12	B	4.1	1.0364
13	B	4.0	0.9433
14	B	4.5	1.3399
15	B	4.5	1.1592

Company Sanitized. Does not contain TSCA CBI

TABLE 34

2.5 mg/L: FISH LENGTHS AND WEIGHTS
AT TEST CONCLUSION FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Number	Replicate	Standard Length (cm)	Wet Weight (grams)
1	A	4.4	1.1428
2	A	4.5	1.1615
3	A	4.6	1.3356
4	A	4.2	1.0136
5	A	4.5	1.2240
6	A	4.6	1.4234
7	A	4.6	1.3265
8	A	4.1	0.9396
9	A	3.8	0.7740
10	A	3.5	0.6740
11	A	5.2	2.2725
12	A	4.4	1.2405
13	A	3.7	0.6606
14	A	4.6	1.4608
15	A	4.5	1.2362
1	B	4.8	2.1571
2	B	4.2	1.1943
3	B	3.7	0.6238
4	B	3.6	0.7038
5	B	4.3	1.1273
6	B	3.8	0.8275
7	B	4.7	1.3778
8	B	4.1	0.8607
9	B	3.6	1.4794
10	B	5.5	2.5532
11	B	4.1	0.9505
12	B	4.0	0.8852
13	B	3.6	0.6275
14	B	4.2	1.0204
15	B	4.5	1.2146

Company Sanitized. Does not contain TSCA CBI

TABLE 35

5 mg/L: FISH LENGTHS AND WEIGHTS
AT TEST CONCLUSION FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Number	Replicate	Standard Length (cm)	Wet Weight (grams)
1	A	5.2	2.0702
2	A	4.5	1.3127
3	A	4.2	1.1007
4	A	3.9	0.8384
5	A	4.7	1.3550
6	A	4.0	1.0300
7	A	4.5	1.3834
8	A	4.9	1.8640
9	A	3.9	0.8269
10	A	3.7	0.7091
11	A	4.5	1.3704
12	A	4.7	1.6631
13	A	4.0	0.9759
14	A	3.8	0.6888
15	A	5.0	1.5518
1	B	5.1	1.7325
2	B	5.0	1.4996
3	B	5.1	2.1433
4	B	4.5	1.5103
5	B	3.6	0.6885
6	B	3.7	0.8663
7	B	4.9	1.5771
8	B	4.1	1.1297
9	B	4.1	1.2107
10	B	3.6	0.6339
11	B	4.4	1.2599
12	B	4.6	1.3984
13	B	4.3	0.7385
14	B	4.3	1.2696
15	B	3.9	0.8574

Company Sanitized. Does not contain TSCA CBI

TABLE 36

10 mg/L: FISH LENGTHS AND WEIGHTS
AT TEST CONCLUSION FOR THE 90-DAY
RAINBOW TROUT, *Oncorhynchus mykiss*, EARLY LIFE-STAGE TOXICITY TEST

Number	Replicate	Standard Length (cm)	Wet Weight (grams)
1	A	5.0	1.7279
2	A	4.5	1.3768
3	A	5.1	2.3752
4	A	4.0	0.9063
5	A	3.7	0.6258
6	A	3.7	0.7298
7	A	3.7	0.6960
8	A	3.9	0.8408
9	A	3.7	0.6377
10	A	4.0	0.7930
11	A	4.7	1.3288
12	A	4.7	1.4856
13	A	4.5	1.2486
14	A	4.6	1.3468
15	A	4.0	0.8324
1	B	4.0	0.9230
2	B	4.6	1.5074
3	B	4.1	0.9450
4	B	3.7 ^a	0.6698 ^a
5	B	3.7 ^a	0.8071 ^a
6	B	4.1 ^a	1.3133 ^a
7	B	4.0 ^a	1.0730 ^a
8	B	3.6 ^a	0.7933 ^a
9	B	3.5 ^a	0.7510 ^a
10	B	4.5 ^a	1.6654 ^a
11	B	4.0 ^a	1.0229 ^a
12	B	4.6 ^a	1.9418 ^a
13	B	4.3 ^a	1.3070 ^a
14	B	4.4 ^a	1.3083 ^a
15	B	4.1 ^a	1.0943 ^a
a These fish died on day 87 due to a clogged delivery tube and low dissolved oxygen concentration.			

TABLE 37
SUMMARY TABLE OF STATISTICAL ENDPOINTS

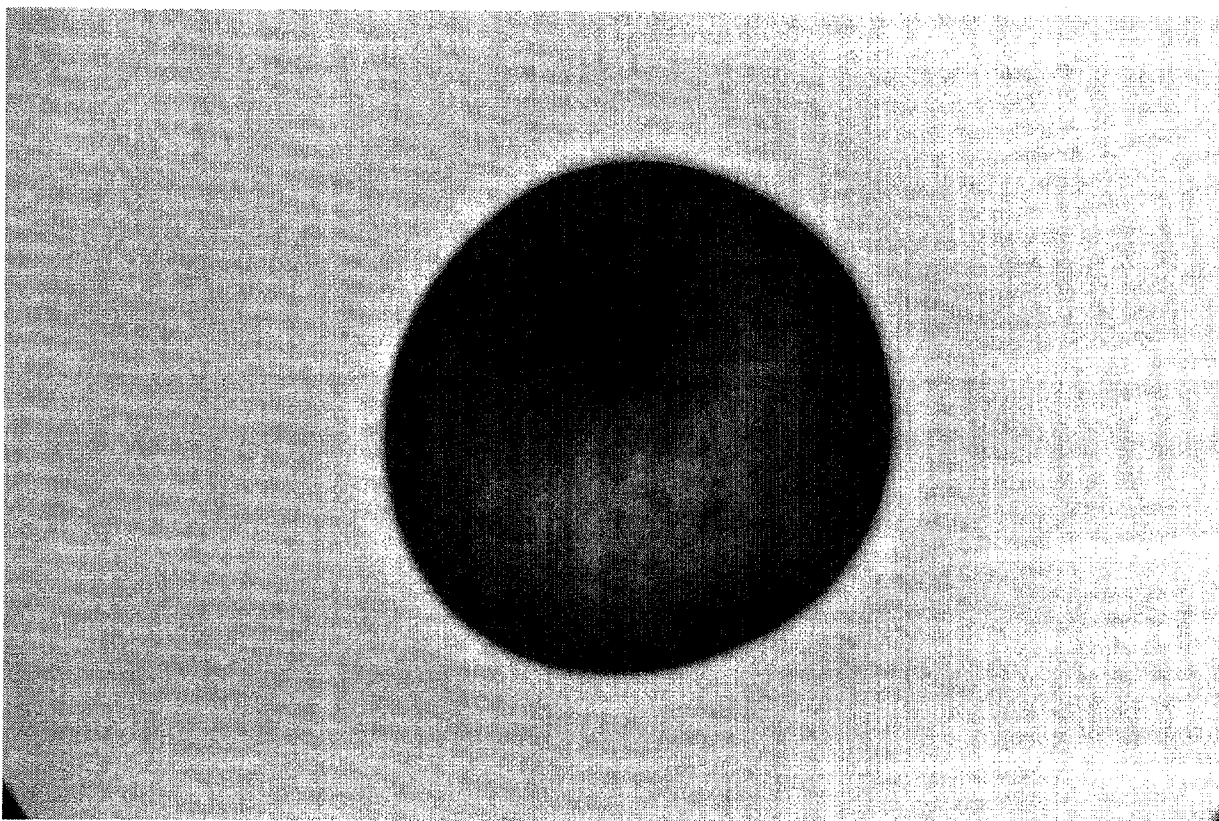
ENDPOINT	NOEC (mg/L)	MATC (mg/L)	LOEC (mg/L)	EC ₅₀ (mg/L)	STATISTICAL TEST(S)	COMMENT
Egg hatching	2.5	3.5	5	*	Cochran-Armitage	
Larval survival@ thinning	> 10	*	*	*	Cochran-Armitage	
Larval abnormality@ thinning	> 10	*	*	*	Cochran-Armitage	
Larvae survival@ test end	> 10	*	*	*	Cochran-Armitage	
Larval abnormality@ test end	5	7	10	*	Cochran-Armitage	
First day hatching	> 10	*	*	*	Jonckheere-Terpstra	Exact analysis
Last day hatching	> 10	*	*	*	Mann-Whitney	Exact analysis
First day swimup	> 10	*	*	*	Jonckheere-Terpstra	Exact analysis
Length @ test end	0.63	0.90	1.3	*	Jonckheere-Terpstra	
Length @ test end	> 10	*	*	*	Dunnett's	
Weight @ test end	5	7	10	*	Jonckheere-Terpstra	

* Not calculated/could not be adequately determined

FIGURES

Company Sanitized. Does not contain TSCA CBI

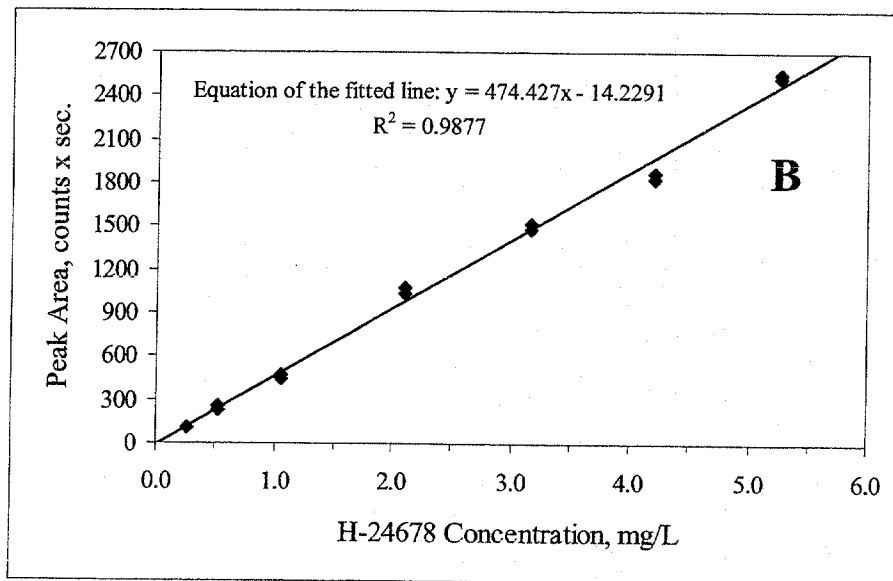
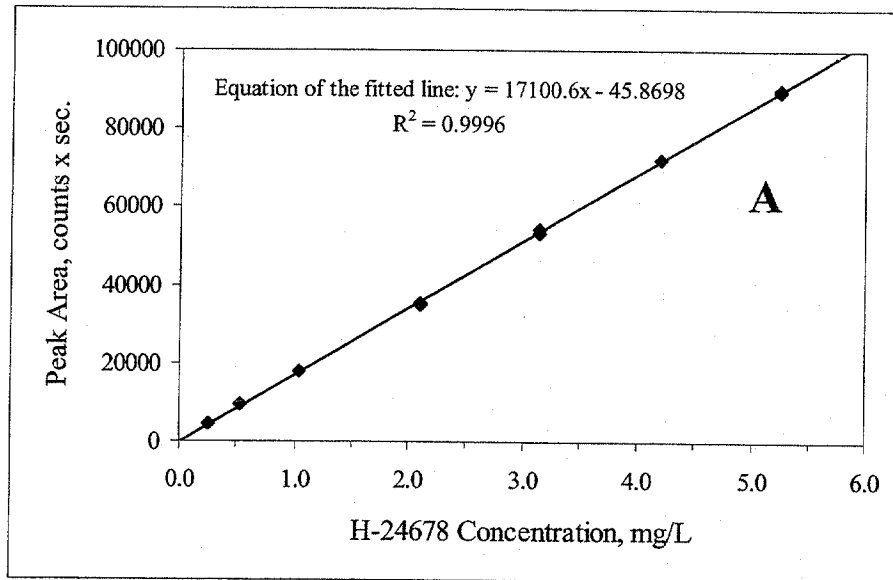
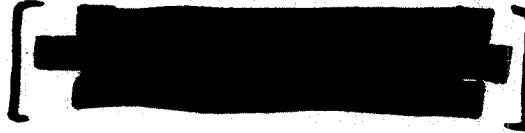
FIGURE 1
PHOTOGRAPH OF AN EMBRYO AT APPROXIMATELY 22-HOURS
POST-FERTILIZATION



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FIGURE 2

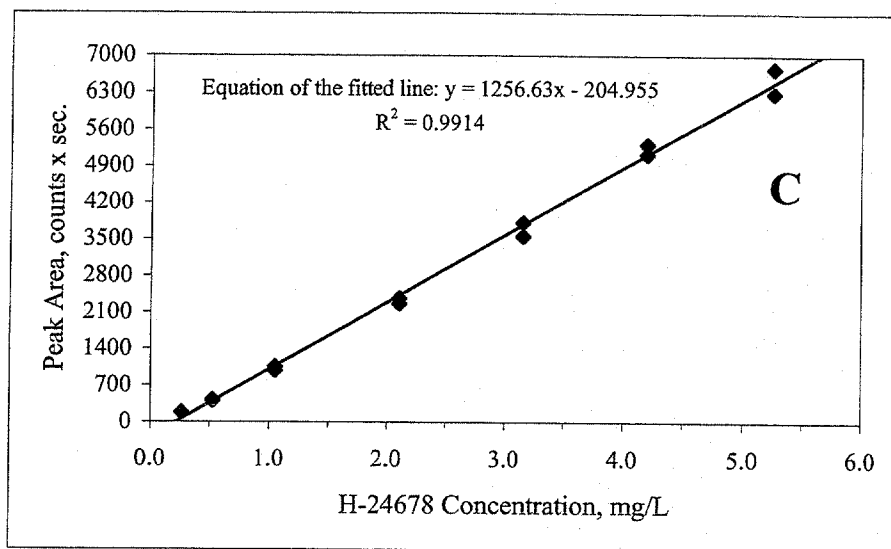
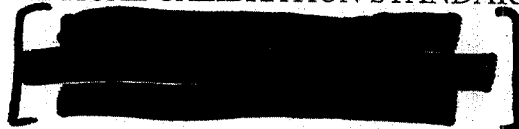
REPRESENTATIVE ANALYTICAL CALIBRATION STANDARD CURVE FOR H-24678:



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FIGURE 2 (Continued)

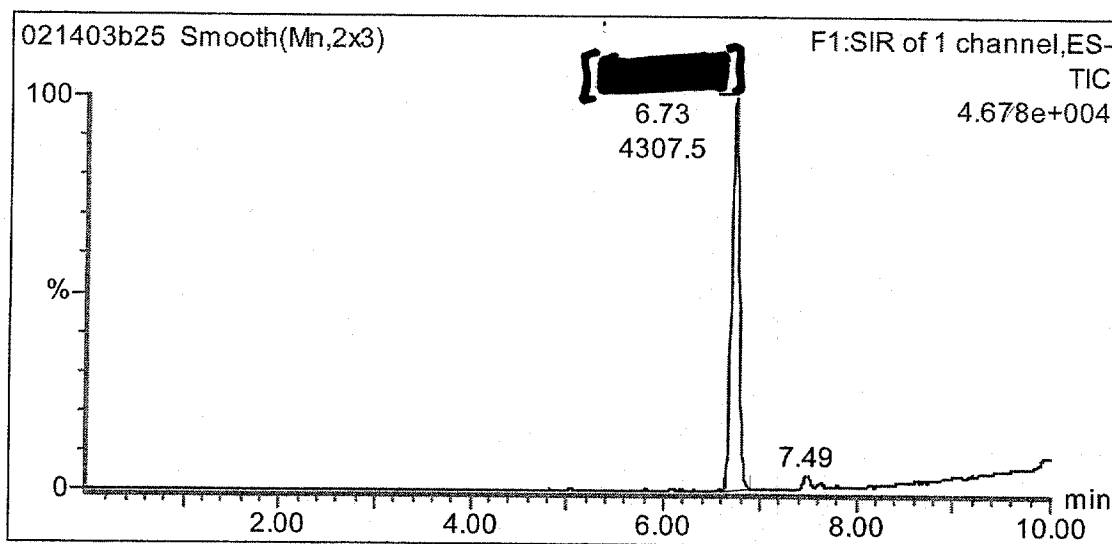
REPRESENTATIVE ANALYTICAL CALIBRATION STANDARD CURVE FOR H-24678:



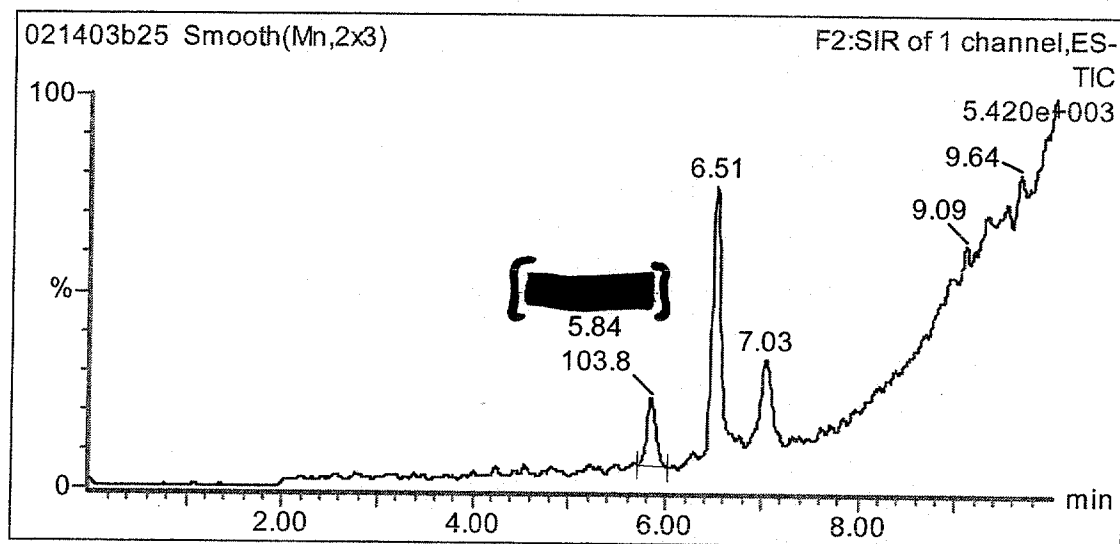
Company Sanitized. Does not contain TSCA CBI

FIGURE 3

REPRESENTATIVE HPLC CHROMATOGRAM OF A
CALIBRATION STANDARD SOLUTION



[REDACTED] elutes at a retention time of approximately 6.7 minutes. Calibration standard solution contains H-24678 at a concentration of 0.263 mg/L.

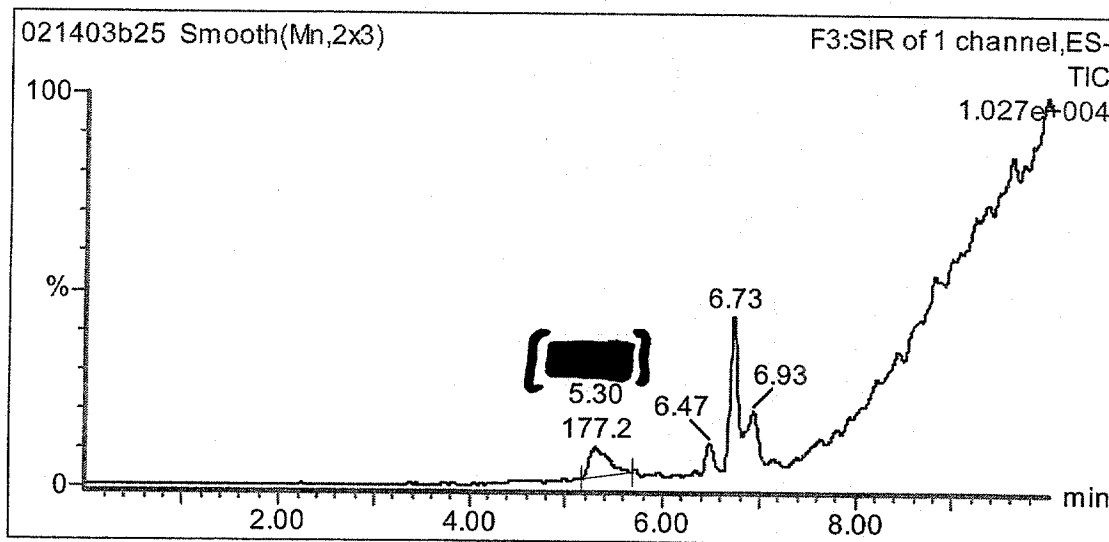


[REDACTED] elutes at a retention time of approximately 5.8 minutes. Calibration standard solution contains H-24678 at a concentration of 0.263 mg/L.

Company Sanitized. Does not contain TSCA CBI

FIGURE 3 (Continued)

REPRESENTATIVE HPLC CHROMATOGRAM OF A
CALIBRATION STANDARD SOLUTION

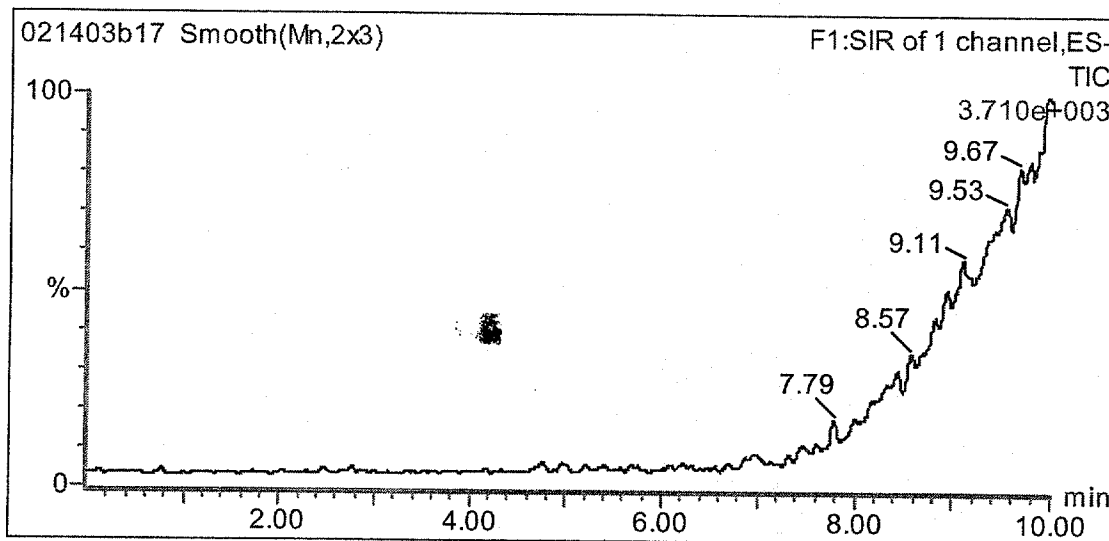


[REDACTED] elutes at a retention time of approximately 5.3 minutes. Calibration standard solution contains H-24678 at a concentration of 0.263 mg/L.

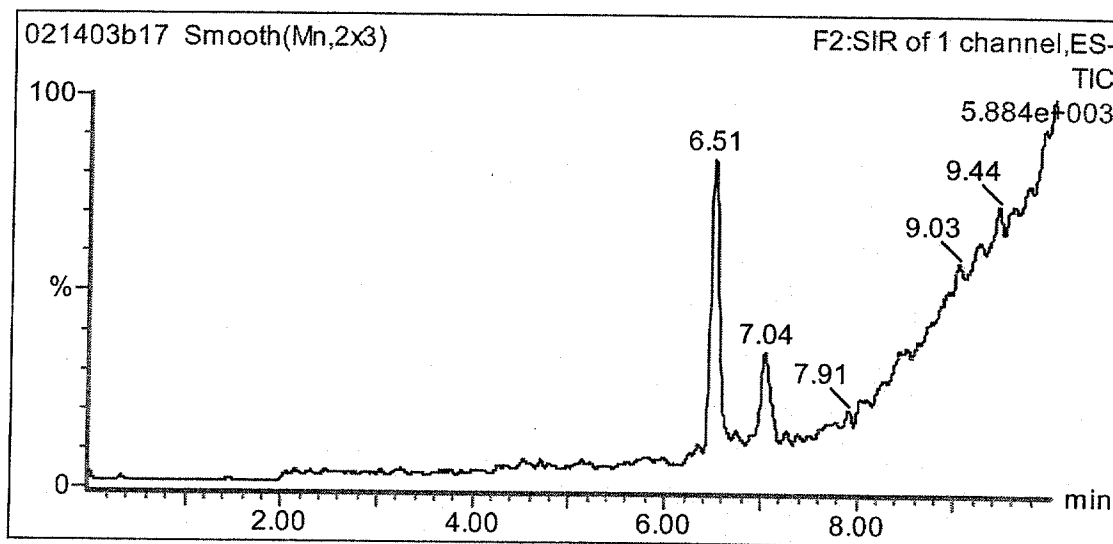
Company Sanitized. Does not contain TSCA CBI

FIGURE 4

REPRESENTATIVE HPLC CHROMATOGRAM OF A
DILUTION WATER CONTROL SOLUTION



[REDACTED] would elute at a retention time of approximately 6.7 minutes.

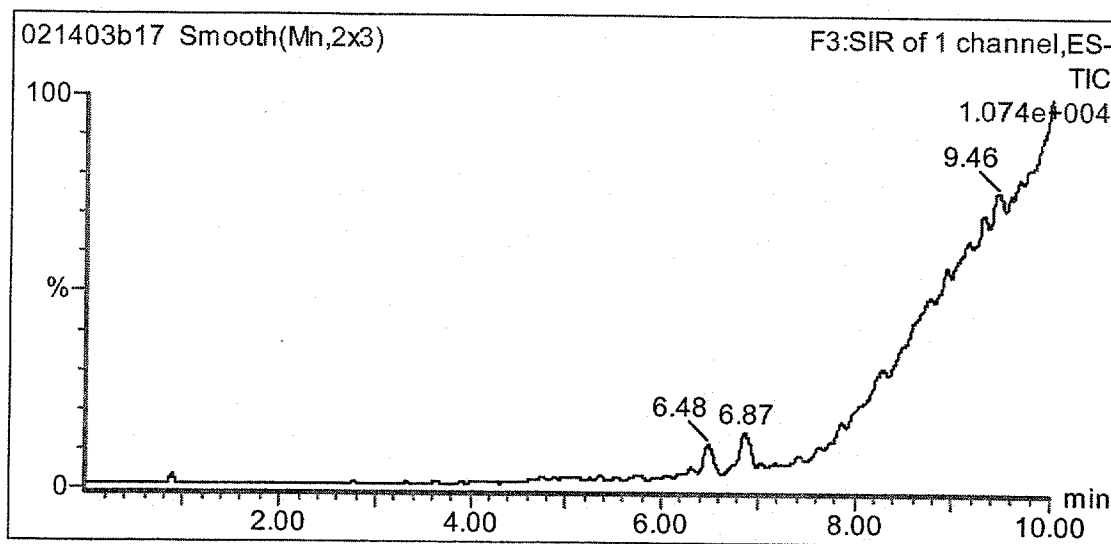


[REDACTED] would elute at a retention time of approximately 5.8 minutes.

Company Sanitized. Does not contain TSCA CBI

FIGURE 4 (Continued)

REPRESENTATIVE HPLC CHROMATOGRAM OF A
DILUTION WATER CONTROL SOLUTION

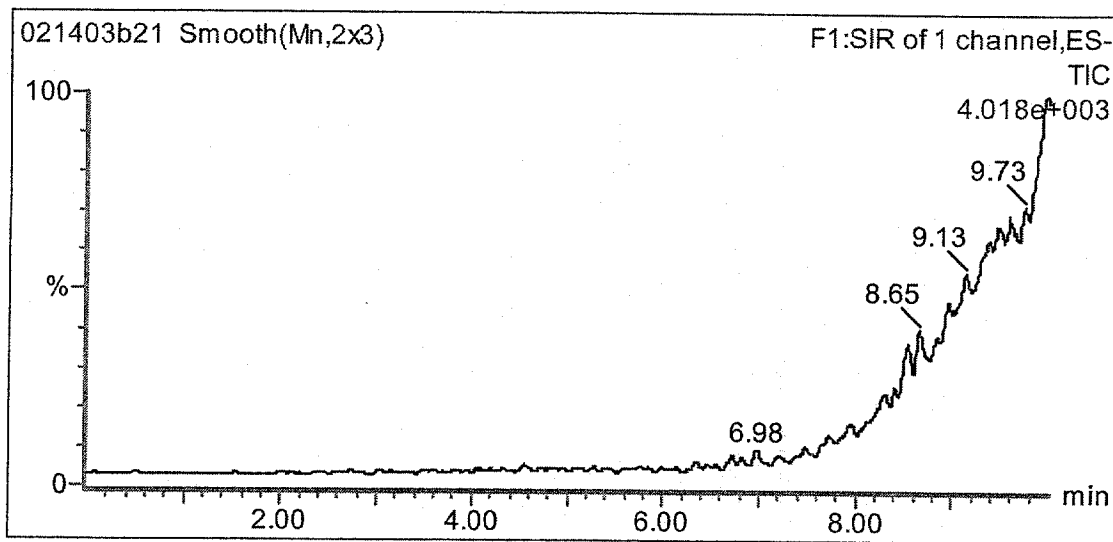


[REDACTED] would elute at a retention time of approximately 5.3 minutes.

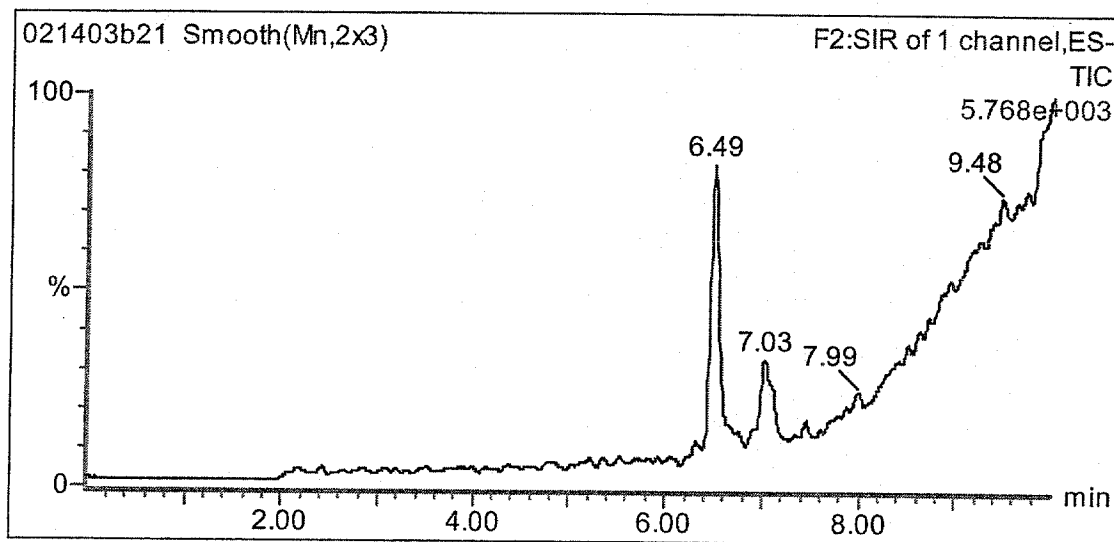
Company Sanitized. Does not contain TSCA CDI

FIGURE 5

REPRESENTATIVE HPLC CHROMATOGRAM OF AN
IPA WATER CONTROL SOLUTION



[REDACTED] would elute at a retention time of approximately 6.7 minutes.

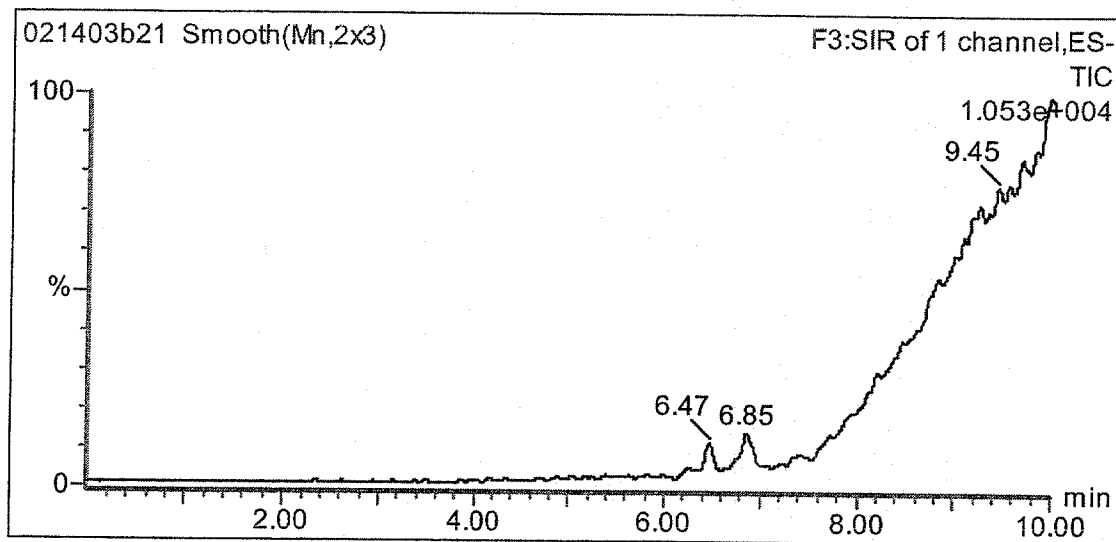


[REDACTED] would elute at a retention time of approximately 5.8 minutes.

Company Sanitized. Does not contain TSCA CBI

FIGURE 5 (Continued)

REPRESENTATIVE HPLC CHROMATOGRAM OF A IPA WATER CONTROL SOLUTION

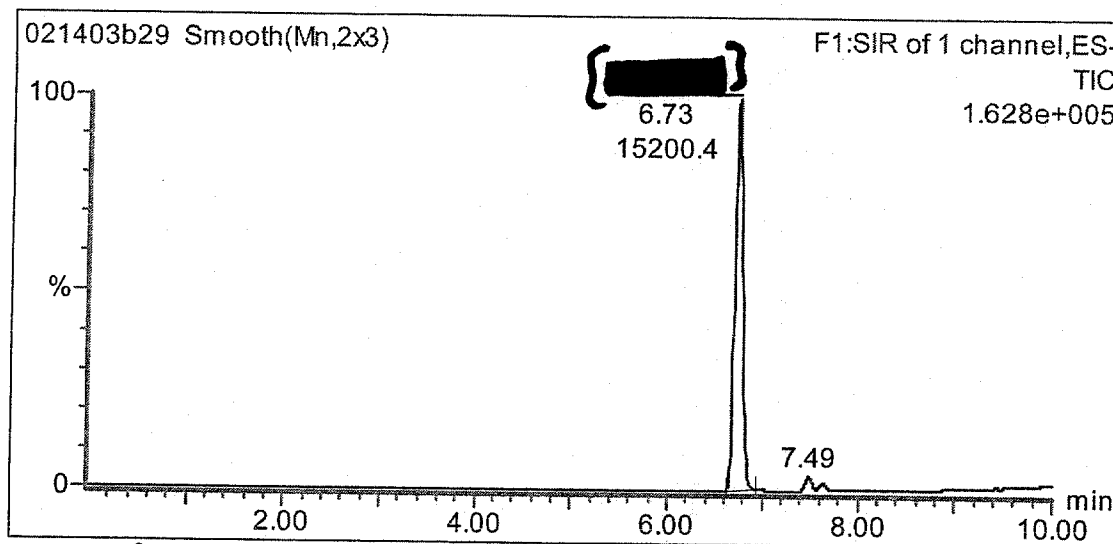


[REDACTED] would elute at a retention time of approximately 5.3 minutes.

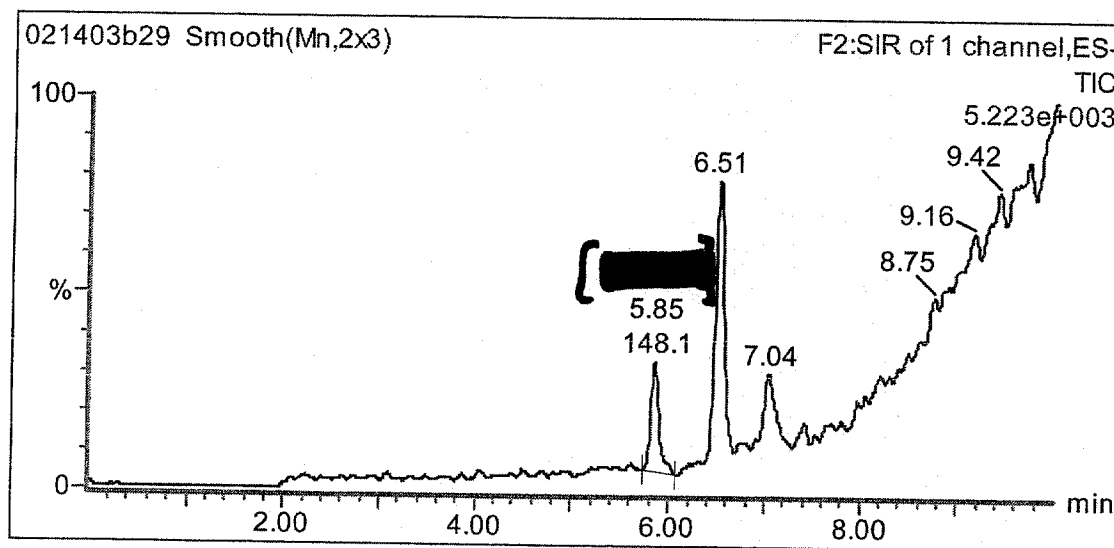
Company Sanitized. Does not contain TSCA CBI

FIGURE 6

REPRESENTATIVE HPLC CHROMATOGRAM OF A H-24678 TEST SOLUTION



[REDACTED] elutes at a retention time of approximately 6.7 minutes. Test solution sample contains H-24678 at a nominal concentration of 0.63 mg/L.

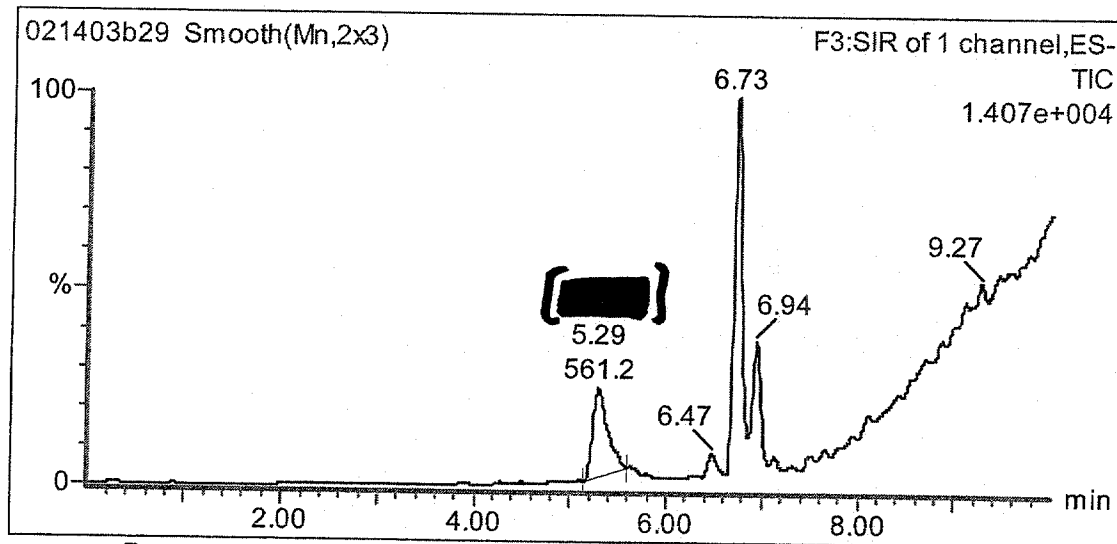


[REDACTED] elutes at a retention time of approximately 5.9 minutes. Test solution sample contains H-24678 at a nominal concentration of 0.63 mg/L.

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FIGURE 6 (Continued)

REPRESENTATIVE HPLC CHROMATOGRAM OF A H-24678 TEST SOLUTION



[REDACTED] elutes at a retention time of approximately 5.3 minutes. Test solution sample contains H-24678 at a nominal concentration of 0.63 mg/L.

Company Sanitized. Does not contain TSCA CBI