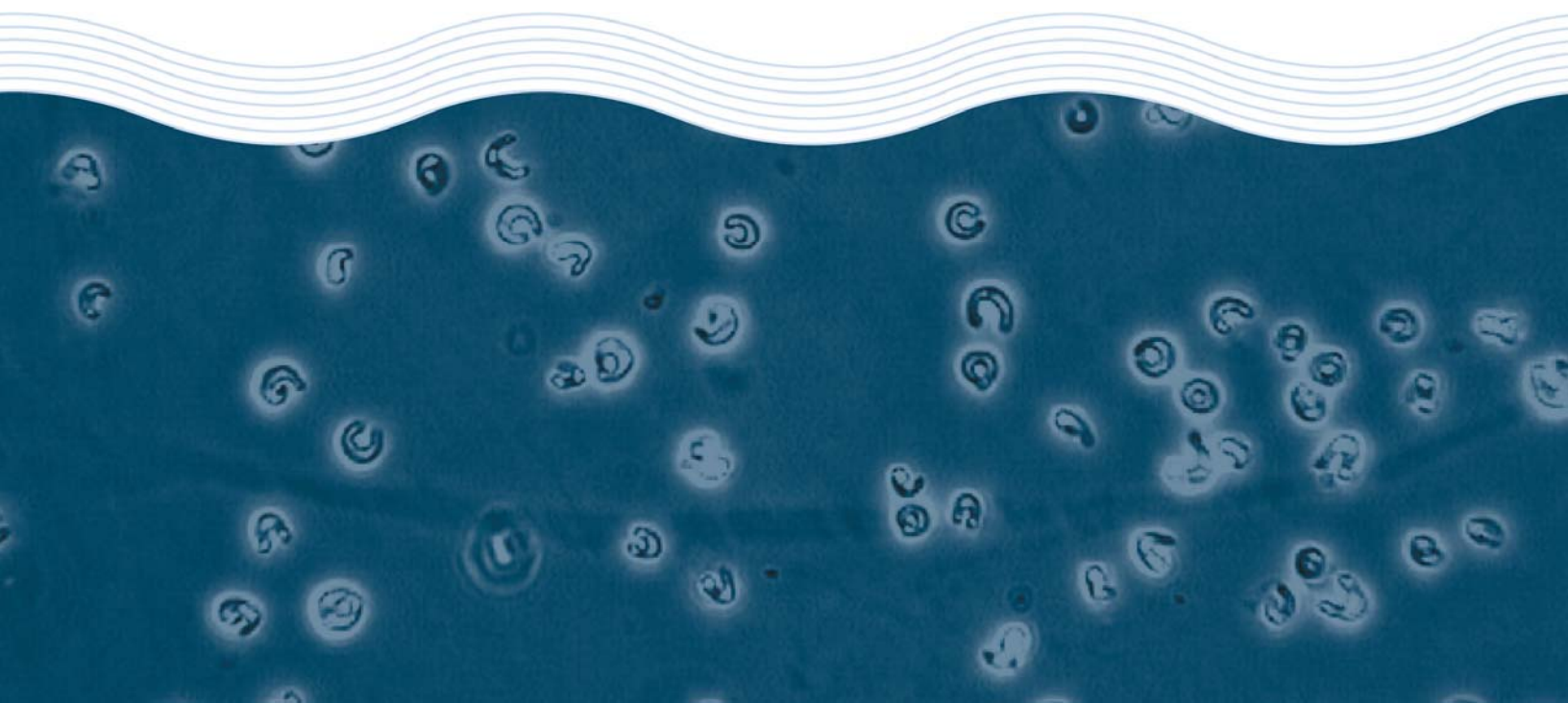


**Toxicity Assessment of
Phoslock™ to the Freshwater
Shrimp *Macrobrachium sp.***

**Hydrobiology Pty Ltd for
Phoslock Water Solutions Pty Ltd**

Test Report

November 2006



**Toxicity Assessment of
Phoslock™ to the Freshwater
Shrimp *Macrobrachium sp.***

**Hydrobiology Pty Ltd for
Phoslock Water Solutions Pty Ltd**

Test Report

November 2006

Toxicity Test Report: TR0224/2

(page 1 of 1)

| | | | |
|--------------------|--|-----------------------|-------------------|
| Client: | Hydrobiology Pty Ltd PO Box 2050 Milton QLD 4064 | ESA Job #: | PR0224 |
| Attention: | Mr Dustin Hobbs | Date Sampled: | Not given |
| Contract #: | | Date Received: | 14 September 2006 |
| | | Sampled By: | Client |
| | | Quote #: | PL0224_q01 |


| | | |
|--------------------|---------------------|--------------------------------------|
| Lab ID No.: | Sample Name: | Sample Description: |
| 1763 | Phoslock | Brown granules and powder, clay like |

| | |
|----------------------------------|---|
| Test Performed: | 96-hr acute toxicity test using juvenile freshwater shrimp <i>Macrobrachium sp.</i> |
| Test Protocol: | ESA SOP 107, amended for use with freshwater shrimp |
| Deviations from Protocol: | Nil. TCLP leachate was prepared by mixing 50g of test material with 1 litre dilution water for 18-h in a rotary tumbler (without light). This leachate was allowed to settle overnight prior to use. The TCLP leachate was 100% sample, and was used in the preparation of test treatments. |
| Source of Test Organisms: | Hatchery reared shrimp, Childers QLD, 8-12 mm in length |
| Test Initiated: | 29 September 2006 at 1400h (range-finder initiated 19 September) |

| Sample 1763: Phoslock TCLP | | Vacant | Vacant |
|---|------------------------|--------|--------|
| Concentration (%) | % survival (Mean ± SD) | | |
| Control | 95.0 ± 10.0 | | |
| 6.25 | 100.0 ± 0.0 | | |
| 12.5 | 95.0 ± 10.0 | | |
| 25 | 95.0 ± 10.0 | | |
| 50 | 100.0 ± 0.0 | | |
| 100 | 70.0 ± 11.6 | | |
| 96 h EC50 = >100% (non-linear interpolation method) | | | |
| NOEC = 100% | | | |
| LOEC =>100% | | | |

There was no significant reduction in survival compared with the control treatment (Steels Many-one Rank Test, 1-tailed)

| QA/QC Parameter | Criterion | This Test | Criterion met? |
|----------------------------|------------|-----------------------------|----------------|
| Control minimum % survival | >90% | 95.0 | Yes |
| Test Temperature limits | 20.0 ± 1°C | 19.5-21.0 °C | Yes |
| Reference toxicant Test | none | 223.2µg Cu ²⁺ /L | n/a |

Test Report Authorised by:  Dr Rick Krassoi, Director on 12 October 2006

Results are based on the samples in the condition as received by ESA. This document shall not be reproduced except in full.

Toxicity Test Report: TR0224/3

(page 1 of 2)

| | | | |
|--------------------|--|-----------------------|-------------------|
| Client: | Hydrobiology Pty Ltd PO Box 2050 Milton QLD 4064 | ESA Job #: | PR0224 |
| Attention: | Mr Dustin Hobbs | Date Sampled: | Not given |
| Contract #: | | Date Received: | 14 September 2006 |
| | | Sampled By: | Client |
| | | Quote #: | PL0224_q01 |

| | | |
|--------------------|---------------------|--------------------------------------|
| Lab ID No.: | Sample Name: | Sample Description: |
| 1763 | Phoslock | Brown granules and powder, clay like |

| | |
|----------------------------------|--|
| Test Performed: | 28-d sub-lethal toxicity test using juvenile freshwater shrimp <i>Macrobrachium sp.</i> |
| Test Protocol: | ESA SOP 107, amended for use with freshwater shrimp |
| Deviations from Protocol: | Nil. TCLP leachate was prepared by mixing the specified weight of test material with 1 litre dilution water for 18-h in a rotary tumbler (without light). This leachate was allowed to settle overnight prior to use. No further dilution was performed. |
| Source of Test Organisms: | Hatchery reared shrimp, Childers QLD, 8-12 mm in length |
| Test Initiated: | 14 October 2006 at 1700h |

| Sample 1763: Phoslock TCLP | | Sample 1763: Phoslock TCLP | | Sample 1763: Phoslock TCLP | |
|---|---------------------------------|---|----------------------------------|---|----------------------------------|
| Concentration (g/L) | % survival at Day 7 (Mean ± SD) | Concentration (g/L) | % survival at Day 14 (Mean ± SD) | Concentration (g/L) | % survival at Day 21 (Mean ± SD) |
| Control | 100.0 ± 0.0 | Control | 95.0 ± 10.0 | Control | 95.0 ± 10.0 |
| 0.05 | 95.0 ± 10.0 | 0.05 | 95.0 ± 10.0 | 0.05 | 95.0 ± 10.0 |
| 0.1 | 95.0 ± 10.0 | 0.1 | 95.0 ± 10.0 | 0.1 | 95.0 ± 10.0 |
| 0.2 | 100.0 ± 0.0 | 0.2 | 95.0 ± 10.0 | 0.2 | 95.0 ± 10.0 |
| 0.4 | 95.0 ± 10.0 | 0.4 | 90.0 ± 11.6 | 0.4 | 90.0 ± 11.6 |
| 0.8 | 50.0 ± 11.6* | 0.8 | 45.0 ± 10.0* | 0.8 | 45.0 ± 10.0** |
| 7 d EC50 = >0.8 g/L (Log-Logit interpolation method) NOEC = 0.4 g/L LOEC = 0.8 g/L | | 14 d EC50 = 0.8 (0.6-1.1) g/L (TSK Trim Value= 47.4) NOEC = 0.4 g/L LOEC = 0.8 g/L | | 21 d EC50 = 0.7 (0.6-0.8) g/L (TSK Trim Value= 33.3) NOEC = 0.4 g/L LOEC = 0.8 g/L | |

*Significant reduction in survival compared with the control treatment (Steels Many-one RankTest, P=0.05, 1-tailed)

**Significant reduction in survival compared with the control treatment (Dunnetts Test, P=0.05, 1-tailed, df= 5,18)


Toxicity Test Report: TR0224/3

(page 2 of 2)

| Sample 1763: <i>Phoslock</i> TCLP Concentration (g/L) | % survival at Day 28 (Mean ± SD) | Vacant | Vacant |
|---|--|--------|--------|
| Control | 85 ± 19.2 | | |
| 0.05 | 85 ± 19.2 | | |
| 0.1 | 85 ± 19.2 | | |
| 0.2 | 90.0 ± 11.6 | | |
| 0.4 | 80.0 ± 16.3 | | |
| 0.8 | 30.0 ± 11.6* | | |
| 28 d EC50 = 0.7 (0.6-0.8) g/L (TSK Trim Value= 34.8) NOEC = 0.4 g/L LOEC = 0.8 g/L | | | |

*Significant reduction in survival compared with the control treatment (Dunnetts Test, P=0.05, 1-tailed, df= 5,18)

| QA/QC Parameter | Criterion | This Test | Criterion met? |
|----------------------------|------------|-----------------------------|----------------|
| Control minimum % survival | >80% | 85.0 | Yes |
| Test Temperature limits | 20.0 ± 1°C | 19.5-21.0 °C | Yes |
| Reference toxicant Test | none | 223.2µg Cu ²⁺ /L | n/a |

Test Report Authorised by:  Dr Rick Krassoi, Director on 9 November 2006

Results are based on the samples in the condition as received by ESA. This document shall not be reproduced except in full.

**Statistical Printouts for the 96-h
Acute *Macrobrachium* Test**

Tiger Prawn Survival Test-96 hr Survival

| | | |
|--|----------------------|------------------------------------|
| Start Date: 29/09/2006 14:00 | Test ID: PR224/2 | Sample ID: Phoslock TCLP |
| End Date: 3/10/2006 14:00 | Lab ID: 1763 | Sample Type: CP-Chemical product |
| Sample Date: | Protocol: ESA SOP107 | Test Species: MD-Macrobrachium sp. |
| Comments: TCLP: 50g ploslock mixed into 1L DMW | | |

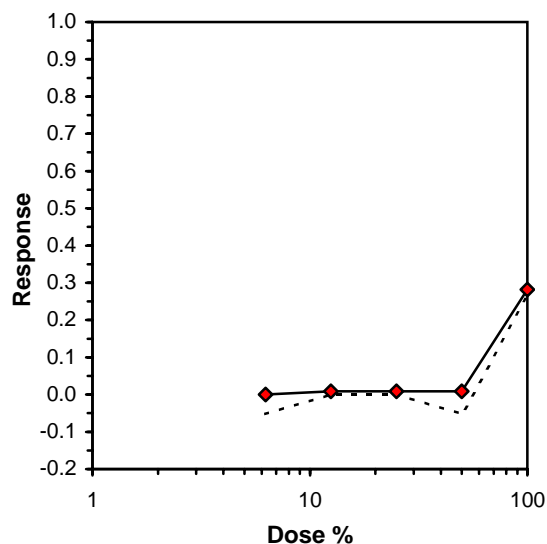
| Conc-% | 1 | 2 | 3 | 4 |
|---------|--------|--------|--------|--------|
| Control | 1.0000 | 1.0000 | 1.0000 | 0.8000 |
| 6.25 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 12.5 | 1.0000 | 1.0000 | 0.8000 | 1.0000 |
| 25 | 1.0000 | 1.0000 | 1.0000 | 0.8000 |
| 50 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 100 | 0.6000 | 0.8000 | 0.8000 | 0.6000 |

| Conc-% | Mean | N-Mean | Transform: Arcsin Square Root | | | | Rank Sum | 1-Tailed Critical | Isot Mean |
|---------|--------|--------|-------------------------------|--------|--------|--------|----------|-------------------|-----------|
| | | | Mean | Min | Max | CV% | | | |
| Control | 0.9500 | 1.0000 | 1.2857 | 1.1071 | 1.3453 | 9.261 | 4 | 0.9750 | |
| 6.25 | 1.0000 | 1.0526 | 1.3453 | 1.3453 | 1.3453 | 0.000 | 4 | 0.9750 | |
| 12.5 | 0.9500 | 1.0000 | 1.2857 | 1.1071 | 1.3453 | 9.261 | 4 | 0.9667 | |
| 25 | 0.9500 | 1.0000 | 1.2857 | 1.1071 | 1.3453 | 9.261 | 4 | 0.9667 | |
| 50 | 1.0000 | 1.0526 | 1.3453 | 1.3453 | 1.3453 | 0.000 | 4 | 0.9667 | |
| 100 | 0.7000 | 0.7368 | 0.9966 | 0.8861 | 1.1071 | 12.807 | 4 | 0.7000 | |

| Auxiliary Tests | Statistic | Critical | Skew |
|---|-----------|----------|----------|
| Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.01) | 0.816274 | 0.884 | -1.07221 |
| Equality of variance cannot be confirmed | | | |

| Hypothesis Test (1-tail, 0.05) | NOEC | LOEC | ChV | TU |
|--------------------------------|------|------|-----|----|
| Steel's Many-One Rank Test | 100 | >100 | | 1 |

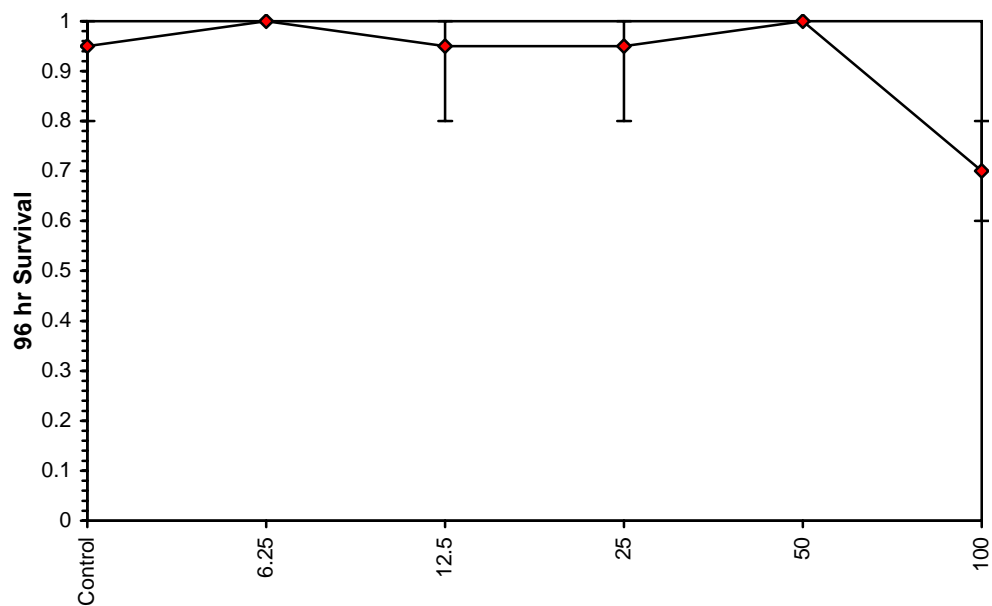
| Log-Logit Interpolation (200 Resamples) | | | | | |
|---|--------|--------|-------------|--------|---------|
| Point | % | SD | 95% CL(Exp) | Skew | |
| IC05 | 62.990 | 15.492 | 0.000 | 73.047 | -1.9991 |
| IC10 | 73.514 | 6.341 | 49.308 | 89.776 | -0.1178 |
| IC15 | 81.874 | 5.828 | 62.192 | 97.216 | 0.1924 |
| IC20 | 89.169 | | | | |
| IC25 | 95.878 | | | | |
| IC40 | >100 | | | | |
| IC50 | >100 | | | | |



Tiger Prawn Survival Test-96 hr Survival

| | | | | | |
|--------------|--------------------------------------|-----------|------------|---------------|----------------------|
| Start Date: | 29/09/2006 14:00 | Test ID: | PR224/2 | Sample ID: | Phoslock TCLP |
| End Date: | 3/10/2006 14:00 | Lab ID: | 1763 | Sample Type: | CP-Chemical product |
| Sample Date: | | Protocol: | ESA SOP107 | Test Species: | MD-Macrobrachium sp. |
| Comments: | TCLP: 50g ploslock mixed into 1L DMW | | | | |

Dose-Response Plot



Tiger Prawn Survival Test-96 hr Survival

| | | | | | |
|--------------|--------------------------------------|-----------|------------|---------------|----------------------|
| Start Date: | 29/09/2006 14:00 | Test ID: | PR224/2 | Sample ID: | Phoslock TCLP |
| End Date: | 3/10/2006 14:00 | Lab ID: | 1763 | Sample Type: | CP-Chemical product |
| Sample Date: | | Protocol: | ESA SOP107 | Test Species: | MD-Macrobrachium sp. |
| Comments: | TCLP: 50g phoslock mixed into 1L DMW | | | | |

Auxiliary Data Summary

| Conc-% | Parameter | Mean | Min | Max | SD | CV% | N |
|---------|------------|---------|---------|---------|-------|------|---|
| Control | % surv | 95.00 | 80.00 | 100.00 | 10.00 | 3.33 | 4 |
| 6.25 | | 100.00 | 100.00 | 100.00 | 0.00 | 0.00 | 4 |
| 12.5 | | 95.00 | 80.00 | 100.00 | 10.00 | 3.33 | 4 |
| 25 | | 95.00 | 80.00 | 100.00 | 10.00 | 3.33 | 4 |
| 50 | | 100.00 | 100.00 | 100.00 | 0.00 | 0.00 | 4 |
| 100 | | 70.00 | 60.00 | 80.00 | 11.55 | 4.85 | 4 |
| Control | Temp C | 19.50 | 19.50 | 19.50 | 0.00 | 0.00 | 1 |
| 6.25 | | 19.50 | 19.50 | 19.50 | 0.00 | 0.00 | 1 |
| 12.5 | | 19.50 | 19.50 | 19.50 | 0.00 | 0.00 | 1 |
| 25 | | 19.50 | 19.50 | 19.50 | 0.00 | 0.00 | 1 |
| 50 | | 19.50 | 19.50 | 19.50 | 0.00 | 0.00 | 1 |
| 100 | | 19.50 | 19.50 | 19.50 | 0.00 | 0.00 | 1 |
| Control | pH | 8.00 | 8.00 | 8.00 | 0.00 | 0.00 | 1 |
| 6.25 | | 8.00 | 8.00 | 8.00 | 0.00 | 0.00 | 1 |
| 12.5 | | 8.00 | 8.00 | 8.00 | 0.00 | 0.00 | 1 |
| 25 | | 8.00 | 8.00 | 8.00 | 0.00 | 0.00 | 1 |
| 50 | | 8.10 | 8.10 | 8.10 | 0.00 | 0.00 | 1 |
| 100 | | 8.10 | 8.10 | 8.10 | 0.00 | 0.00 | 1 |
| Control | Cond uS/cm | 195.00 | 195.00 | 195.00 | 0.00 | 0.00 | 1 |
| 6.25 | | 244.00 | 244.00 | 244.00 | 0.00 | 0.00 | 1 |
| 12.5 | | 305.00 | 305.00 | 305.00 | 0.00 | 0.00 | 1 |
| 25 | | 425.00 | 425.00 | 425.00 | 0.00 | 0.00 | 1 |
| 50 | | 662.00 | 662.00 | 662.00 | 0.00 | 0.00 | 1 |
| 100 | | 1142.00 | 1142.00 | 1142.00 | 0.00 | 0.00 | 1 |
| Control | DO %sat | 7.80 | 7.80 | 7.80 | 0.00 | 0.00 | 1 |
| 6.25 | | 7.80 | 7.80 | 7.80 | 0.00 | 0.00 | 1 |
| 12.5 | | 7.80 | 7.80 | 7.80 | 0.00 | 0.00 | 1 |
| 25 | | 7.80 | 7.80 | 7.80 | 0.00 | 0.00 | 1 |
| 50 | | 7.80 | 7.80 | 7.80 | 0.00 | 0.00 | 1 |
| 100 | | 7.80 | 7.80 | 7.80 | 0.00 | 0.00 | 1 |

**Statistical Printouts for the 28-
day Sub-lethal *Macrobrachium*
Test**

Mysid Survival, Growth and Fecundity Test-7d Survival

| | | |
|------------------------------|-------------------|------------------------------------|
| Start Date: 14/10/2006 17:00 | Test ID: PR224/12 | Sample ID: phoslock TCLP |
| End Date: 1/11/2006 17:00 | Lab ID: 1763 | Sample Type: CP-Chemical product |
| Sample Date: | Protocol: none | Test Species: MD-Macrobrachium sp. |

Comments:

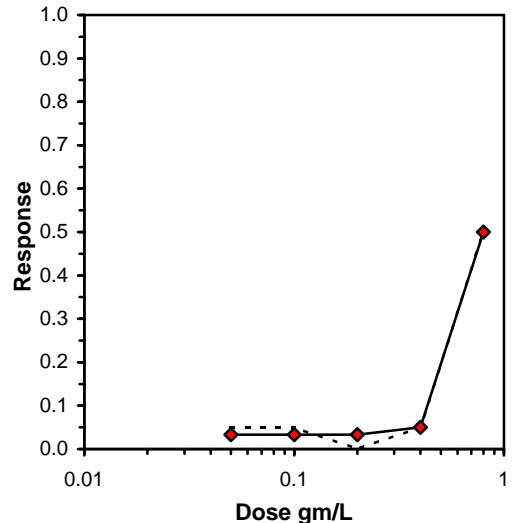
| Conc-gm/L | 1 | 2 | 3 | 4 |
|-----------|--------|--------|--------|--------|
| Control | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 0.05 | 1.0000 | 1.0000 | 0.8000 | 1.0000 |
| 0.1 | 0.8000 | 1.0000 | 1.0000 | 1.0000 |
| 0.2 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 0.4 | 1.0000 | 0.8000 | 1.0000 | 1.0000 |
| 0.8 | 0.6000 | 0.4000 | 0.4000 | 0.6000 |

| Conc-gm/L | Mean | N-Mean | Transform: Arcsin Square Root | | | | Rank Sum | 1-Tailed Critical | Isot Mean |
|-----------|--------|--------|-------------------------------|--------|--------|--------|----------|-------------------|-----------|
| | | | Mean | Min | Max | CV% | | | |
| Control | 1.0000 | 1.0000 | 1.3453 | 1.3453 | 1.3453 | 0.000 | 4 | 1.0000 | |
| 0.05 | 0.9500 | 0.9500 | 1.2857 | 1.1071 | 1.3453 | 9.261 | 4 | 0.9667 | |
| 0.1 | 0.9500 | 0.9500 | 1.2857 | 1.1071 | 1.3453 | 9.261 | 4 | 0.9667 | |
| 0.2 | 1.0000 | 1.0000 | 1.3453 | 1.3453 | 1.3453 | 0.000 | 4 | 0.9667 | |
| 0.4 | 0.9500 | 0.9500 | 1.2857 | 1.1071 | 1.3453 | 9.261 | 4 | 0.9500 | |
| *0.8 | 0.5000 | 0.5000 | 0.7854 | 0.6847 | 0.8861 | 14.802 | 4 | 0.5000 | |

| Auxiliary Tests | Statistic | Critical | Skew |
|---|-----------|----------|----------|
| Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.01) | 0.806108 | 0.884 | -1.15285 |
| Equality of variance cannot be confirmed | | | |

| Hypothesis Test (1-tail, 0.05) | NOEC | LOEC | ChV | TU |
|--------------------------------|------|------|----------|----|
| Steel's Many-One Rank Test | 0.4 | 0.8 | 0.565685 | |

| Log-Logit Interpolation (200 Resamples) | | | | | |
|---|--------|--------|-------------|--------|---------|
| Point | gm/L | SD | 95% CL(Exp) | | Skew |
| IC05 | 0.4000 | 0.1431 | 0.0000 | 0.5916 | -0.8373 |
| IC10 | 0.4922 | 0.0718 | 0.2630 | 0.6525 | -0.1038 |
| IC15 | 0.5523 | 0.0603 | 0.3086 | 0.6982 | -0.1002 |
| IC20 | 0.5991 | 0.0507 | 0.3965 | 0.7335 | -0.1376 |
| IC25 | 0.6389 | 0.0429 | 0.4729 | 0.7632 | -0.1774 |
| IC40 | 0.7388 | | | | |
| IC50 | >0.8 | | | | |



Mysid Survival, Growth and Fecundity Test-7d Survival

| | | |
|------------------------------|-------------------|------------------------------------|
| Start Date: 14/10/2006 17:00 | Test ID: PR224/12 | Sample ID: phoslock TCLP |
| End Date: 1/11/2006 17:00 | Lab ID: 1763 | Sample Type: CP-Chemical product |
| Sample Date: | Protocol: none | Test Species: MD-Macrobrachium sp. |
| Comments: | | |

| | | Auxiliary Data Summary | | | | | |
|-----------|------------|------------------------|--------|--------|-------|------|---|
| Conc-gm/L | Parameter | Mean | Min | Max | SD | CV% | N |
| Control | %surv Day7 | 100.00 | 100.00 | 100.00 | 0.00 | 0.00 | 4 |
| 0.05 | | 95.00 | 80.00 | 100.00 | 10.00 | 3.33 | 4 |
| 0.1 | | 95.00 | 80.00 | 100.00 | 10.00 | 3.33 | 4 |
| 0.2 | | 100.00 | 100.00 | 100.00 | 0.00 | 0.00 | 4 |
| 0.4 | | 95.00 | 80.00 | 100.00 | 10.00 | 3.33 | 4 |
| 0.8 | | 50.00 | 40.00 | 60.00 | 11.55 | 6.80 | 4 |
| Control | Temp C | 19.50 | 19.50 | 19.50 | 0.00 | 0.00 | 1 |
| 0.05 | | 19.50 | 19.50 | 19.50 | 0.00 | 0.00 | 1 |
| 0.1 | | 19.50 | 19.50 | 19.50 | 0.00 | 0.00 | 1 |
| 0.2 | | 19.50 | 19.50 | 19.50 | 0.00 | 0.00 | 1 |
| 0.4 | | 19.50 | 19.50 | 19.50 | 0.00 | 0.00 | 1 |
| 0.8 | | 19.50 | 19.50 | 19.50 | 0.00 | 0.00 | 1 |
| Control | pH | 7.00 | 7.00 | 7.00 | 0.00 | 0.00 | 1 |
| 0.05 | | 7.00 | 7.00 | 7.00 | 0.00 | 0.00 | 1 |
| 0.1 | | 7.00 | 7.00 | 7.00 | 0.00 | 0.00 | 1 |
| 0.2 | | 7.10 | 7.10 | 7.10 | 0.00 | 0.00 | 1 |
| 0.4 | | 7.20 | 7.20 | 7.20 | 0.00 | 0.00 | 1 |
| 0.8 | | 7.20 | 7.20 | 7.20 | 0.00 | 0.00 | 1 |
| Control | Cond uS/cm | 196.00 | 196.00 | 196.00 | 0.00 | 0.00 | 1 |
| 0.05 | | 197.00 | 197.00 | 197.00 | 0.00 | 0.00 | 1 |
| 0.1 | | 197.00 | 197.00 | 197.00 | 0.00 | 0.00 | 1 |
| 0.2 | | 198.00 | 198.00 | 198.00 | 0.00 | 0.00 | 1 |
| 0.4 | | 200.00 | 200.00 | 200.00 | 0.00 | 0.00 | 1 |
| 0.8 | | 205.00 | 205.00 | 205.00 | 0.00 | 0.00 | 1 |
| Control | DO %sat | 100.70 | 100.70 | 100.70 | 0.00 | 0.00 | 1 |
| 0.05 | | 100.60 | 100.60 | 100.60 | 0.00 | 0.00 | 1 |
| 0.1 | | 100.40 | 100.40 | 100.40 | 0.00 | 0.00 | 1 |
| 0.2 | | 100.20 | 100.20 | 100.20 | 0.00 | 0.00 | 1 |
| 0.4 | | 100.10 | 100.10 | 100.10 | 0.00 | 0.00 | 1 |
| 0.8 | | 99.90 | 99.90 | 99.90 | 0.00 | 0.00 | 1 |

Mysid Survival, Growth and Fecundity Test-14d Hr Survival

| | | |
|------------------------------|-------------------|------------------------------------|
| Start Date: 14/10/2006 17:00 | Test ID: PR224/13 | Sample ID: phoslock TCLP |
| End Date: 1/11/2006 17:00 | Lab ID: 1763 | Sample Type: CP-Chemical product |
| Sample Date: | Protocol: none | Test Species: MD-Macrobrachium sp. |

Comments:

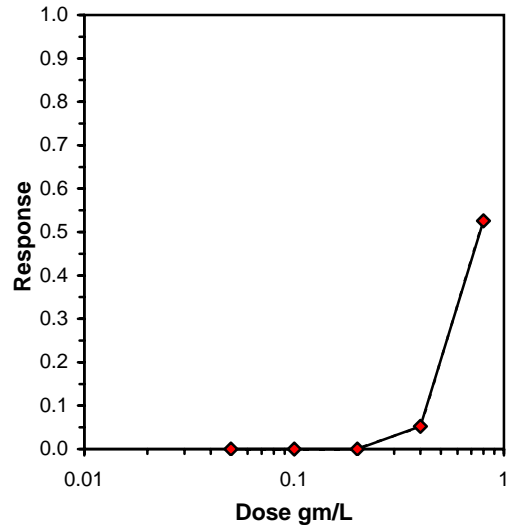
| Conc-gm/L | 1 | 2 | 3 | 4 |
|-----------|--------|--------|--------|--------|
| Control | 1.0000 | 1.0000 | 0.8000 | 1.0000 |
| 0.05 | 1.0000 | 1.0000 | 0.8000 | 1.0000 |
| 0.1 | 0.8000 | 1.0000 | 1.0000 | 1.0000 |
| 0.2 | 1.0000 | 0.8000 | 1.0000 | 1.0000 |
| 0.4 | 1.0000 | 0.8000 | 1.0000 | 0.8000 |
| 0.8 | 0.6000 | 0.4000 | 0.4000 | 0.4000 |

| Conc-gm/L | Mean | N-Mean | Transform: Arcsin Square Root | | | | Rank Sum | 1-Tailed Critical | Number Resp |
|-----------|--------|--------|-------------------------------|--------|--------|--------|----------|-------------------|-------------|
| | | | Mean | Min | Max | CV% | | | |
| Control | 0.9500 | 1.0000 | 1.2857 | 1.1071 | 1.3453 | 9.261 | | 1 | |
| 0.05 | 0.9500 | 1.0000 | 1.2857 | 1.1071 | 1.3453 | 9.261 | 18.00 | 1 | |
| 0.1 | 0.9500 | 1.0000 | 1.2857 | 1.1071 | 1.3453 | 9.261 | 18.00 | 1 | |
| 0.2 | 0.9500 | 1.0000 | 1.2857 | 1.1071 | 1.3453 | 9.261 | 18.00 | 1 | |
| 0.4 | 0.9000 | 0.9474 | 1.2262 | 1.1071 | 1.3453 | 11.212 | 16.00 | 2 | |
| *0.8 | 0.4500 | 0.4737 | 0.7351 | 0.6847 | 0.8861 | 13.697 | 10.00 | 11 | |

| Auxiliary Tests | Statistic | Critical | Skew |
|---|-----------|----------|---------|
| Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.01) | 0.821593 | 0.884 | -0.6895 |
| Bartlett's Test indicates equal variances (p = 1.00) | 0.254788 | 15.08627 | |

| Hypothesis Test (1-tail, 0.05) | NOEC | LOEC | ChV | TU |
|--------------------------------|------|------|----------|----|
| Steel's Many-One Rank Test | 0.4 | 0.8 | 0.565685 | |

| Trimmed Spearman-Kärber | | | |
|-------------------------|--------|--------|--------|
| Trim Level | EC50 | 95% CL | |
| 0.0% | | | |
| 5.0% | | | |
| 10.0% | | | |
| 20.0% | | | |
| Auto-47.4% | 0.7698 | 0.5653 | 1.0482 |



Mysid Survival, Growth and Fecundity Test-14d Hr Survival

| | | |
|------------------------------|-------------------|------------------------------------|
| Start Date: 14/10/2006 17:00 | Test ID: PR224/13 | Sample ID: phoslock TCLP |
| End Date: 1/11/2006 17:00 | Lab ID: 1763 | Sample Type: CP-Chemical product |
| Sample Date: | Protocol: none | Test Species: MD-Macrobrachium sp. |
| Comments: | | |

| | | Auxiliary Data Summary | | | | | |
|-----------|-------------|------------------------|--------|--------|-------|------|---|
| Conc-gm/L | Parameter | Mean | Min | Max | SD | CV% | N |
| Control | %surv Day14 | 95.00 | 80.00 | 100.00 | 10.00 | 3.33 | 4 |
| 0.05 | | 95.00 | 80.00 | 100.00 | 10.00 | 3.33 | 4 |
| 0.1 | | 95.00 | 80.00 | 100.00 | 10.00 | 3.33 | 4 |
| 0.2 | | 95.00 | 80.00 | 100.00 | 10.00 | 3.33 | 4 |
| 0.4 | | 90.00 | 80.00 | 100.00 | 11.55 | 3.78 | 4 |
| 0.8 | | 45.00 | 40.00 | 60.00 | 10.00 | 7.03 | 4 |
| Control | Temp C | 19.50 | 19.50 | 19.50 | 0.00 | 0.00 | 1 |
| 0.05 | | 19.50 | 19.50 | 19.50 | 0.00 | 0.00 | 1 |
| 0.1 | | 19.50 | 19.50 | 19.50 | 0.00 | 0.00 | 1 |
| 0.2 | | 19.50 | 19.50 | 19.50 | 0.00 | 0.00 | 1 |
| 0.4 | | 19.50 | 19.50 | 19.50 | 0.00 | 0.00 | 1 |
| 0.8 | | 19.50 | 19.50 | 19.50 | 0.00 | 0.00 | 1 |
| Control | pH | 7.00 | 7.00 | 7.00 | 0.00 | 0.00 | 1 |
| 0.05 | | 7.00 | 7.00 | 7.00 | 0.00 | 0.00 | 1 |
| 0.1 | | 7.00 | 7.00 | 7.00 | 0.00 | 0.00 | 1 |
| 0.2 | | 7.10 | 7.10 | 7.10 | 0.00 | 0.00 | 1 |
| 0.4 | | 7.20 | 7.20 | 7.20 | 0.00 | 0.00 | 1 |
| 0.8 | | 7.20 | 7.20 | 7.20 | 0.00 | 0.00 | 1 |
| Control | Cond uS/cm | 196.00 | 196.00 | 196.00 | 0.00 | 0.00 | 1 |
| 0.05 | | 197.00 | 197.00 | 197.00 | 0.00 | 0.00 | 1 |
| 0.1 | | 197.00 | 197.00 | 197.00 | 0.00 | 0.00 | 1 |
| 0.2 | | 198.00 | 198.00 | 198.00 | 0.00 | 0.00 | 1 |
| 0.4 | | 200.00 | 200.00 | 200.00 | 0.00 | 0.00 | 1 |
| 0.8 | | 205.00 | 205.00 | 205.00 | 0.00 | 0.00 | 1 |
| Control | DO %sat | 100.70 | 100.70 | 100.70 | 0.00 | 0.00 | 1 |
| 0.05 | | 100.60 | 100.60 | 100.60 | 0.00 | 0.00 | 1 |
| 0.1 | | 100.40 | 100.40 | 100.40 | 0.00 | 0.00 | 1 |
| 0.2 | | 100.20 | 100.20 | 100.20 | 0.00 | 0.00 | 1 |
| 0.4 | | 100.10 | 100.10 | 100.10 | 0.00 | 0.00 | 1 |
| 0.8 | | 99.90 | 99.90 | 99.90 | 0.00 | 0.00 | 1 |

Mysid Survival, Growth and Fecundity Test-21d Survival

| | | |
|------------------------------|-------------------|------------------------------------|
| Start Date: 14/10/2006 17:00 | Test ID: PR224/14 | Sample ID: phoslock TCLP |
| End Date: 1/11/2006 17:00 | Lab ID: 1763 | Sample Type: CP-Chemical product |
| Sample Date: | Protocol: none | Test Species: MD-Macrobrachium sp. |

Comments:

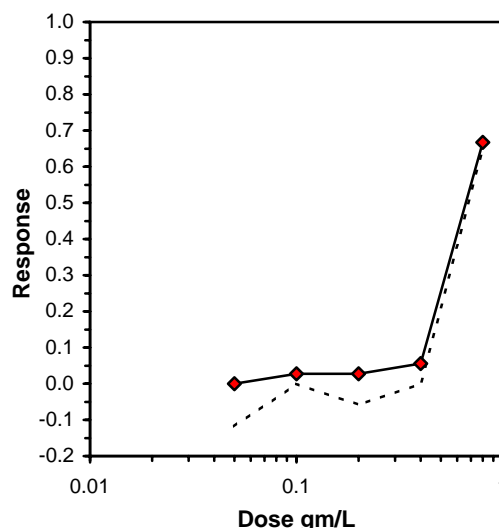
| Conc-gm/L | 1 | 2 | 3 | 4 |
|-----------|--------|--------|--------|--------|
| Control | 0.6000 | 1.0000 | 0.8000 | 1.0000 |
| 0.05 | 1.0000 | 1.0000 | 0.8000 | 1.0000 |
| 0.1 | 0.8000 | 0.6000 | 1.0000 | 1.0000 |
| 0.2 | 1.0000 | 0.8000 | 0.8000 | 1.0000 |
| 0.4 | 0.8000 | 0.8000 | 1.0000 | 0.8000 |
| 0.8 | 0.4000 | 0.4000 | 0.2000 | 0.2000 |

| Conc-gm/L | Mean | N-Mean | Transform: Arcsin Square Root | | | | N | t-Stat | 1-Tailed Critical | MSD | Number Resp |
|-----------|--------|--------|-------------------------------|--------|--------|--------|---|--------|-------------------|--------|-------------|
| | | | Mean | Min | Max | CV% | | | | | |
| Control | 0.8500 | 1.0000 | 1.1709 | 0.8861 | 1.3453 | 18.840 | 4 | | | | 3 |
| 0.05 | 0.9500 | 1.1176 | 1.2857 | 1.1071 | 1.3453 | 9.261 | 4 | -0.991 | 2.410 | 0.2791 | 1 |
| 0.1 | 0.8500 | 1.0000 | 1.1709 | 0.8861 | 1.3453 | 18.840 | 4 | 0.000 | 2.410 | 0.2791 | 3 |
| 0.2 | 0.9000 | 1.0588 | 1.2262 | 1.1071 | 1.3453 | 11.212 | 4 | -0.477 | 2.410 | 0.2791 | 2 |
| 0.4 | 0.8500 | 1.0000 | 1.1667 | 1.1071 | 1.3453 | 10.206 | 4 | 0.037 | 2.410 | 0.2791 | 3 |
| *0.8 | 0.3000 | 0.3529 | 0.5742 | 0.4636 | 0.6847 | 22.229 | 4 | 5.154 | 2.410 | 0.2791 | 14 |

| Auxiliary Tests | Statistic | Critical | Skew |
|--|-----------|----------|----------|
| Shapiro-Wilk's Test indicates normal distribution (p > 0.01) | 0.908278 | 0.884 | -0.39881 |
| Bartlett's Test indicates equal variances (p = 0.78) | 2.470821 | 15.08627 | |

| Hypothesis Test (1-tail, 0.05) | NOEC | LOEC | ChV | TU | MSDu | MSDp | MSB | MSE | F-Prob |
|--------------------------------|------|------|----------|----|----------|----------|---------|----------|---------|
| Dunnett's Test | 0.4 | 0.8 | 0.565685 | | 0.242768 | 0.286127 | 0.27314 | 0.026814 | 9.3E-05 |

| Trimmed Spearman-Kärber | | | |
|-------------------------|--------|--------|--------|
| Trim Level | EC50 | 95% CL | |
| 0.0% | | | |
| 5.0% | | | |
| 10.0% | | | |
| 20.0% | | | |
| Auto-33.3% | 0.6622 | 0.5549 | 0.7902 |



Mysid Survival, Growth and Fecundity Test-21d Survival

| | | |
|------------------------------|-------------------|------------------------------------|
| Start Date: 14/10/2006 17:00 | Test ID: PR224/14 | Sample ID: phoslock TCLP |
| End Date: 1/11/2006 17:00 | Lab ID: 1763 | Sample Type: CP-Chemical product |
| Sample Date: | Protocol: none | Test Species: MD-Macrobrachium sp. |
| Comments: | | |

Auxiliary Data Summary

| Conc-gm/L | Parameter | Mean | Min | Max | SD | CV% | N |
|-----------|-------------|--------|--------|--------|-------|-------|---|
| Control | %surv Day21 | 85.00 | 60.00 | 100.00 | 19.15 | 5.15 | 4 |
| 0.05 | | 95.00 | 80.00 | 100.00 | 10.00 | 3.33 | 4 |
| 0.1 | | 85.00 | 60.00 | 100.00 | 19.15 | 5.15 | 4 |
| 0.2 | | 90.00 | 80.00 | 100.00 | 11.55 | 3.78 | 4 |
| 0.4 | | 85.00 | 80.00 | 100.00 | 10.00 | 3.72 | 4 |
| 0.8 | | 30.00 | 20.00 | 40.00 | 11.55 | 11.33 | 4 |
| Control | Temp C | 19.50 | 19.50 | 19.50 | 0.00 | 0.00 | 1 |
| 0.05 | | 19.50 | 19.50 | 19.50 | 0.00 | 0.00 | 1 |
| 0.1 | | 19.50 | 19.50 | 19.50 | 0.00 | 0.00 | 1 |
| 0.2 | | 19.50 | 19.50 | 19.50 | 0.00 | 0.00 | 1 |
| 0.4 | | 19.50 | 19.50 | 19.50 | 0.00 | 0.00 | 1 |
| 0.8 | | 19.50 | 19.50 | 19.50 | 0.00 | 0.00 | 1 |
| Control | pH | 7.00 | 7.00 | 7.00 | 0.00 | 0.00 | 1 |
| 0.05 | | 7.00 | 7.00 | 7.00 | 0.00 | 0.00 | 1 |
| 0.1 | | 7.00 | 7.00 | 7.00 | 0.00 | 0.00 | 1 |
| 0.2 | | 7.10 | 7.10 | 7.10 | 0.00 | 0.00 | 1 |
| 0.4 | | 7.20 | 7.20 | 7.20 | 0.00 | 0.00 | 1 |
| 0.8 | | 7.20 | 7.20 | 7.20 | 0.00 | 0.00 | 1 |
| Control | Cond uS/cm | 196.00 | 196.00 | 196.00 | 0.00 | 0.00 | 1 |
| 0.05 | | 197.00 | 197.00 | 197.00 | 0.00 | 0.00 | 1 |
| 0.1 | | 197.00 | 197.00 | 197.00 | 0.00 | 0.00 | 1 |
| 0.2 | | 198.00 | 198.00 | 198.00 | 0.00 | 0.00 | 1 |
| 0.4 | | 200.00 | 200.00 | 200.00 | 0.00 | 0.00 | 1 |
| 0.8 | | 205.00 | 205.00 | 205.00 | 0.00 | 0.00 | 1 |
| Control | DO %sat | 100.70 | 100.70 | 100.70 | 0.00 | 0.00 | 1 |
| 0.05 | | 100.60 | 100.60 | 100.60 | 0.00 | 0.00 | 1 |
| 0.1 | | 100.40 | 100.40 | 100.40 | 0.00 | 0.00 | 1 |
| 0.2 | | 100.20 | 100.20 | 100.20 | 0.00 | 0.00 | 1 |
| 0.4 | | 100.10 | 100.10 | 100.10 | 0.00 | 0.00 | 1 |
| 0.8 | | 99.90 | 99.90 | 99.90 | 0.00 | 0.00 | 1 |

Mysid Survival, Growth and Fecundity Test-28d Survival

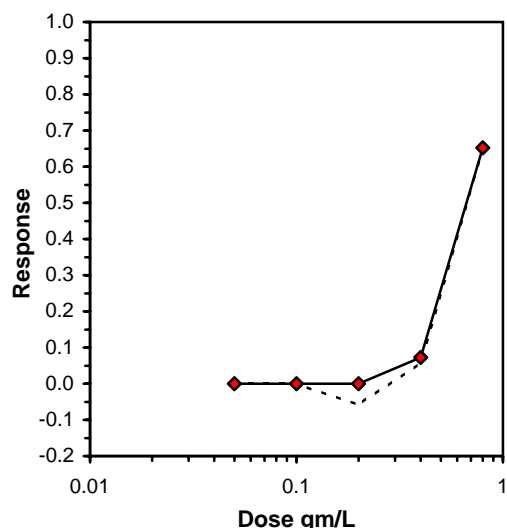
| | | | | | |
|--------------|------------------|-----------|----------|---------------|----------------------|
| Start Date: | 14/10/2006 17:00 | Test ID: | PR224/11 | Sample ID: | phoslock TCLP |
| End Date: | 1/11/2006 17:00 | Lab ID: | 1763 | Sample Type: | CP-Chemical product |
| Sample Date: | | Protocol: | none | Test Species: | MD-Macrobrachium sp. |
| Comments: | | | | | |

| Conc-gm/L | 1 | 2 | 3 | 4 |
|-----------|--------|--------|--------|--------|
| Control | 0.6000 | 1.0000 | 0.8000 | 1.0000 |
| 0.05 | 0.8000 | 1.0000 | 0.6000 | 1.0000 |
| 0.1 | 0.8000 | 0.6000 | 1.0000 | 1.0000 |
| 0.2 | 1.0000 | 0.8000 | 0.8000 | 1.0000 |
| 0.4 | 0.8000 | 0.6000 | 1.0000 | 0.8000 |
| 0.8 | 0.4000 | 0.4000 | 0.2000 | 0.2000 |

| Conc-gm/L | Mean | N-Mean | Transform: Arcsin Square Root | | | | N | t-Stat | 1-Tailed Critical | MSD | Number Resp |
|-----------|--------|--------|-------------------------------|--------|--------|--------|---|--------|-------------------|--------|-------------|
| | | | Mean | Min | Max | CV% | | | | | |
| Control | 0.8500 | 1.0000 | 1.1709 | 0.8861 | 1.3453 | 18.840 | 4 | | | | 3 |
| 0.05 | 0.8500 | 1.0000 | 1.1709 | 0.8861 | 1.3453 | 18.840 | 4 | 0.000 | 2.410 | 0.3236 | 3 |
| 0.1 | 0.8500 | 1.0000 | 1.1709 | 0.8861 | 1.3453 | 18.840 | 4 | 0.000 | 2.410 | 0.3236 | 3 |
| 0.2 | 0.9000 | 1.0588 | 1.2262 | 1.1071 | 1.3453 | 11.212 | 4 | -0.412 | 2.410 | 0.3236 | 2 |
| 0.4 | 0.8000 | 0.9412 | 1.1114 | 0.8861 | 1.3453 | 16.874 | 4 | 0.443 | 2.410 | 0.3236 | 4 |
| *0.8 | 0.3000 | 0.3529 | 0.5742 | 0.4636 | 0.6847 | 22.229 | 4 | 4.444 | 2.410 | 0.3236 | 14 |

| Auxiliary Tests | Statistic | Critical | Skew | | | | | | |
|--|-----------|----------|----------|----|----------|----------|----------|----------|----------|
| Shapiro-Wilk's Test indicates normal distribution (p > 0.01) | 0.896977 | 0.884 | -0.37007 | | | | | | |
| Bartlett's Test indicates equal variances (p = 0.91) | 1.503602 | 15.08627 | | | | | | | |
| Hypothesis Test (1-tail, 0.05) | NOEC | LOEC | ChV | TU | MSDu | MSDp | MSB | MSE | F-Prob |
| Dunnett's Test | 0.4 | 0.8 | 0.565685 | | 0.286683 | 0.337885 | 0.242016 | 0.036062 | 0.001081 |

| Trimmed Spearman-Kärber | | | |
|-------------------------|--------|--------|--------|
| Trim Level | EC50 | 95% CL | |
| 0.0% | | | |
| 5.0% | | | |
| 10.0% | | | |
| 20.0% | | | |
| Auto-34.8% | 0.6669 | 0.5508 | 0.8075 |



Mysid Survival, Growth and Fecundity Test-28d Survival

| | | |
|------------------------------|-------------------|------------------------------------|
| Start Date: 14/10/2006 17:00 | Test ID: PR224/11 | Sample ID: phoslock TCLP |
| End Date: 1/11/2006 17:00 | Lab ID: 1763 | Sample Type: CP-Chemical product |
| Sample Date: | Protocol: none | Test Species: MD-Macrobrachium sp. |
| Comments: | | |

Auxiliary Data Summary

| Conc-gm/L | Parameter | Mean | Min | Max | SD | CV% | N |
|-----------|-------------|--------|--------|--------|-------|-------|---|
| Control | %surv Day28 | 85.00 | 60.00 | 100.00 | 19.15 | 5.15 | 4 |
| 0.05 | | 85.00 | 60.00 | 100.00 | 19.15 | 5.15 | 4 |
| 0.1 | | 85.00 | 60.00 | 100.00 | 19.15 | 5.15 | 4 |
| 0.2 | | 90.00 | 80.00 | 100.00 | 11.55 | 3.78 | 4 |
| 0.4 | | 80.00 | 60.00 | 100.00 | 16.33 | 5.05 | 4 |
| 0.8 | | 30.00 | 20.00 | 40.00 | 11.55 | 11.33 | 4 |
| Control | Temp C | 19.50 | 19.50 | 19.50 | 0.00 | 0.00 | 1 |
| 0.05 | | 19.50 | 19.50 | 19.50 | 0.00 | 0.00 | 1 |
| 0.1 | | 19.50 | 19.50 | 19.50 | 0.00 | 0.00 | 1 |
| 0.2 | | 19.50 | 19.50 | 19.50 | 0.00 | 0.00 | 1 |
| 0.4 | | 19.50 | 19.50 | 19.50 | 0.00 | 0.00 | 1 |
| 0.8 | | 19.50 | 19.50 | 19.50 | 0.00 | 0.00 | 1 |
| Control | pH | 7.00 | 7.00 | 7.00 | 0.00 | 0.00 | 1 |
| 0.05 | | 7.00 | 7.00 | 7.00 | 0.00 | 0.00 | 1 |
| 0.1 | | 7.00 | 7.00 | 7.00 | 0.00 | 0.00 | 1 |
| 0.2 | | 7.10 | 7.10 | 7.10 | 0.00 | 0.00 | 1 |
| 0.4 | | 7.20 | 7.20 | 7.20 | 0.00 | 0.00 | 1 |
| 0.8 | | 7.20 | 7.20 | 7.20 | 0.00 | 0.00 | 1 |
| Control | Cond uS/cm | 196.00 | 196.00 | 196.00 | 0.00 | 0.00 | 1 |
| 0.05 | | 197.00 | 197.00 | 197.00 | 0.00 | 0.00 | 1 |
| 0.1 | | 197.00 | 197.00 | 197.00 | 0.00 | 0.00 | 1 |
| 0.2 | | 198.00 | 198.00 | 198.00 | 0.00 | 0.00 | 1 |
| 0.4 | | 200.00 | 200.00 | 200.00 | 0.00 | 0.00 | 1 |
| 0.8 | | 205.00 | 205.00 | 205.00 | 0.00 | 0.00 | 1 |
| Control | DO %sat | 100.70 | 100.70 | 100.70 | 0.00 | 0.00 | 1 |
| 0.05 | | 100.60 | 100.60 | 100.60 | 0.00 | 0.00 | 1 |
| 0.1 | | 100.40 | 100.40 | 100.40 | 0.00 | 0.00 | 1 |
| 0.2 | | 100.20 | 100.20 | 100.20 | 0.00 | 0.00 | 1 |
| 0.4 | | 100.10 | 100.10 | 100.10 | 0.00 | 0.00 | 1 |
| 0.8 | | 99.90 | 99.90 | 99.90 | 0.00 | 0.00 | 1 |