

# ECOTOXICOLOGY LABORATORY TEST REPORT

**CLIENT**

ROB MORGAN  
MARINE EASY CLEAN  
SHOP 2/71 KNIGHT TCE  
DENHAM  
WESTERN AUSTRALIA, 6537

**JOB INFORMATION**

JOB REFERENCE : ECX18-0216  
NO. SAMPLES : 1  
CLIENT ORDER NO. : 040817INTERTEK  
SAMPLED BY : NA  
DATE RECEIVED : 16/02/2018  
DATE REPORTED : 06/03/201

**REPORT NOTES**

A toxicity assessment was performed on Marine Easy Clean's "The Water Clarifier" product to determine if there is any potential toxicity to the aquatic environment.

**TESTED BY**

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## Sample Information

| SAMPLE REFERENCE    | INTERTEK REFERENCE |
|---------------------|--------------------|
| The Water Clarifier | EXC18-0216         |

## Methodology

The Water Clarifier product was tested with the marine microalgal growth test to screen if any toxicity was observed. Due to the insoluble nature of the product, water accommodated fractions were tested following the methodology outlined in the UN GS (2011) for poorly soluble products. All tests were conducted using the water accommodated fractions. The concentrations are expressed as the loading ratio of solid product to filtered seawater / freshwater.

For quality assurance purposes reference toxicant) bioassays were tested simultaneously. Statistically calculated effect concentrations (EC<sub>10</sub>, EC<sub>50</sub>, NOEC and LOEC) have been reported the samples and reference toxicants.

## Bioassay Details

| BIOASSAY          | PROTOCOL | REFERENCE           | TEST SPECIES         | TEMPERATURE |
|-------------------|----------|---------------------|----------------------|-------------|
| <i>Freshwater</i> |          |                     |                      |             |
| Microalgae Growth | WIECX-06 | Stauber et al. 1994 | <i>Chlorella sp.</i> | 22°C        |

## Concentration-Response Data

| Water Accommodated Fraction (mg/L) | Microalgae Growth (% Control) |
|------------------------------------|-------------------------------|
| Control                            | 100 ± 6                       |
| 0.1                                | 125 ± 3                       |
| 1                                  | 127 ± 3                       |
| 10                                 | 145 ± 16                      |
| 100                                | 140 ± 11                      |
| 1000                               | 149 ± 15                      |



### Statistical Effects Data

| BIOASSAY          | EC <sub>10</sub> (mg/L) | EC <sub>50</sub> (mg/L) | NOEC (mg/L) | LOEC (mg/L) |
|-------------------|-------------------------|-------------------------|-------------|-------------|
| <i>Freshwater</i> |                         |                         |             |             |
| Microalgae Growth | >1000                   | >1000                   | >1000       | >1000       |

### Quality Assurance Limits

| BIOASSAY          | REFERENCE TOXICANT | OBSERVED EC <sub>50</sub> | CUSUM CHART LIMITS | COEFFICIENT OF VARIANCE | CONTROL RESPONSE | TEST ACCEPTABILITY |
|-------------------|--------------------|---------------------------|--------------------|-------------------------|------------------|--------------------|
| Microalgae Growth | Copper             | 128 µg/L                  | 86 – 223 µg/L      | 24.7%                   | >3x Divisions    | YES                |

### General Comments

There was no observed toxicity in any of The Water Clarifier water accommodated fractions tested from 0.1 – 1000 mg/L for the microalgal bioassay. However, it is noted that significant positive growth was observed, and this may be a sign of nitrification.

Quality assurance and quality control criteria were within acceptable limits for all bioassays.



# APPENDIX

## Statistical Data



## Freshwater - Microalgae Growth

| Abalone Larval Development Test-Proportion Normal |            |           |                           |               |                     |
|---|------------|-----------|---------------------------|---------------|---------------------|
| Start Date:                                       | 19/02/2018 | Test ID:  | ECX18-0216                | Sample ID:    | Marine Easy Clean   |
| End Date:   | 22/02/2018 | Lab ID:   | FREO-Geotech Fremantle La | Sample Type:  | The Water Clarifier |
| Sample Date:                                      |            | Protocol: | WIECX-06                  | Test Species: | Chlorella sp.       |
| Comments:   |            |           |                           |               |                     |

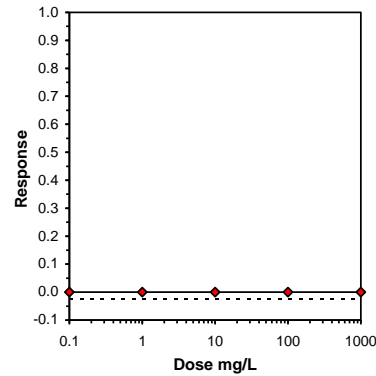
| Conc-mg/L | 1      | 2      | 3      |
|-----------|--------|--------|--------|
| B-Control | 0.9716 | 1.0000 | 0.9645 |
| 0.1       | 1.0000 | 1.0000 | 1.0000 |
| 1         | 1.0000 | 1.0000 | 1.0000 |
| 10        | 1.0000 | 1.0000 | 1.0000 |
| 100       | 1.0000 | 1.0000 | 1.0000 |
| 1000      | 1.0000 | 1.0000 | 1.0000 |

| Conc-mg/L | Mean   | N-Mean | Transform: Arcsin Square Root |        |        |       |   | 2-Tailed |          |        | Isotonic |        |
|-----------|--------|--------|-------------------------------|--------|--------|-------|---|----------|----------|--------|----------|--------|
|           |        |        | Mean                          | Min    | Max    | CV%   | N | t-Stat   | Critical | MSD    | Mean     | N-Mean |
| B-Control | 0.9787 | 1.0000 | 1.4346                        | 1.3814 | 1.5208 | 5.252 | 3 |          |          |        | 0.9961   | 1.0000 |
| *0.1      | 1.0000 | 1.0217 | 1.5208                        | 1.5208 | 1.5208 | 0.000 | 3 | 3.433    | 3.000    | 0.0753 | 0.9961   | 1.0000 |
| *1        | 1.0000 | 1.0217 | 1.5208                        | 1.5208 | 1.5208 | 0.000 | 3 | 3.433    | 3.000    | 0.0753 | 0.9961   | 1.0000 |
| *10       | 1.0000 | 1.0217 | 1.5208                        | 1.5208 | 1.5208 | 0.000 | 3 | 3.433    | 3.000    | 0.0753 | 0.9961   | 1.0000 |
| *100      | 1.0000 | 1.0217 | 1.5208                        | 1.5208 | 1.5208 | 0.000 | 3 | 3.433    | 3.000    | 0.0753 | 0.9961   | 1.0000 |
| *1000     | 1.0000 | 1.0217 | 1.5208                        | 1.5208 | 1.5208 | 0.000 | 3 | 3.433    | 3.000    | 0.0753 | 0.9961   | 1.0000 |

| Auxiliary Tests   | Statistic | Critical | Skew   | Kurt |
|---|-----------|----------|--------|------|
| Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.01) | 0.54774   | 0.858    | 1.7416 | 8.5  |
| Equality of variance cannot be confirmed                          |           |          |        |      |

| Hypothesis Test (2-tail, 0.05) | NOEC | LOEC | ChV | TU | MSDu    | MSDp    | MSB     | MSE     | F-Prob  | df    |
|--------------------------------|------|------|-----|----|---------|---------|---------|---------|---------|-------|
| Dunnett's Test                 | <0.1 | 0.1  |     |    | 0.02566 | 0.02614 | 0.00372 | 0.00095 | 0.02424 | 5, 12 |

| Log-Logit Interpolation (200 Resamples) |       |    |             |      |
|---|-------|----|-------------|------|
| Point                                   | mg/L  | SD | 95% CL(Exp) | Skew |
| IC05                                    | >1000 |    |             |      |
| IC10                                    | >1000 |    |             |      |
| IC15                                    | >1000 |    |             |      |
| IC20                                    | >1000 |    |             |      |
| IC25                                    | >1000 |    |             |      |
| IC40                                    | >1000 |    |             |      |
| IC50                                    | >1000 |    |             |      |



Dose-Response Plot

