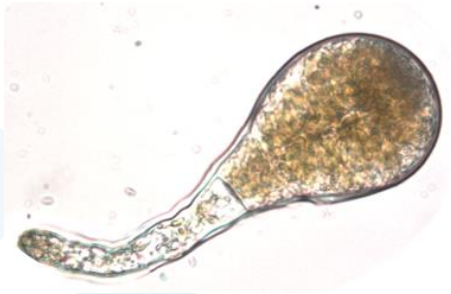
TOXICITY TEST FACT SHEET #12 – Marine

Chronic Toxicity Test with Macroalgae



Two species of macroalgae, sometimes known as seaweed, are commonly used for toxicity assessments: The Neptune Necklace (*Hormosira banksii*) and the Brown Kelp (*Ecklonia radiata*). They play an important role in aquatic ecosystem by providing food to a wide range of marine organisms.

The macroalgae are sourced externally and spawned in the laboratory the day of testing following techniques described by Kevekordes and Clayton (1996), Bidwell (1998) and Burridge (1999).

In summary, this test involves exposing macroalgae zygotes or zoospores to the test material for 72 hours. The test is usually undertaken on a range of concentrations of a test material, eg 100, 50, 25, 12.5 and 6.3% effluent. At the end of the exposure period, the number of germinated individuals are recorded.

Statistical analyses are then applied to the test data to determine for example, the concentration of the test material causing 50% reduction in germinated macroalgae in the test population (EC50 estimate). The test data can then be used to estimate concentrations of the test material likely to cause chronic toxicity in the environment.

The Chronic Macroalgae Test may be used to assess the toxicity of:

- Chemicals
- Effluents
- Leachates and groundwater
- Sediments

The Macroalgae test can also be extended to 14 days. The solutions are renewed every week and the length of the germinated individuals is determined by digital analysis at the end of the exposure period.

If toxicity is detected using the Macroalgae Test, a Toxicity Identification Evaluation (TIE) programme can be initiated to identify the cause of the observed toxicity.

Chronic Toxicity Test Using Macroalgae	
Test type	Chronic static
Test end-point	Germination
Test duration	72 hours
Test Temperature	18 ± 1ºC
Sample quantity required	1 L
Test availability	7 days notice requested
Test turnaround time	Advised within 72 hours of test initiation

T +61 2 9420 9481
Unit 27, 2 Chaplin Drive
Lane Cove NSW 2066 Australia
www.ecotox.com.au
ECOTOX SERVICES AUSTRALIA PTY LIMITED
ABN 95 619 426 201