



## TOXICITY TEST FACT SHEET #15 – Marine

### Acute Toxicity Test With Copepods

The acute toxicity test using copepods is used for the assessment of potential harm posed by effluents, leachates, ground water, receiving waters, chemicals and sediment elutriates to the estuarine copepod *Gladioferens imparipes* (Swan River, WA) and tropical copepod *Parvocalanus crassirostris* (Indo-Pacific species)

Estuarine and marine copepods are important to estuarine and marine ecosystems. They form an important link in the food chain, and are major food organisms for small fish, whales, seabirds and other crustaceans. The acute toxicity test uses mainly laboratory reared copepodids (juvenile copepods) and based on the protocol developed for the tropical copepod *Acartia sinjiensis* (Rose et al., 2006) with some modifications.

In summary, this test involves exposing copepodids to the test material and assessing immobilisation over a 48 hour period. 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 non-immobilised copepodids is recorded.

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

The Acute Amphipod Test may be used to assess the toxicity of:

- Chemicals
- Effluents
- Leachates and groundwater
- Sediments

Acute Toxicity Test With Copepods	
Test type	Acute static
Test end-point	immobilisation
Test duration	48 hours
Test Temperature	20±1°C ( <i>G. imparipes</i> ), or 27±1°C ( <i>P. crassirostris</i> )
Sample volume required	1 L
Test availability	24hrs notice requested
Test turnaround time	Advice given within 72 hours of test initiation