



Standard Guide for Conducting Acute, Chronic, and Life-Cycle Aquatic Toxicity Tests with Polychaetous Annelids¹

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1. Scope

1.1 This guide covers procedures for obtaining data concerning the adverse effects of a test material added to marine and estuarine waters on certain species of polychaetes during short- or long-term continuous exposure. The polychaete species used in these tests are taken from laboratory cultures and exposed to varying concentrations of a toxicant in static conditions. These procedures may be useful for conducting toxicity tests with other species of polychaetes, although modifications might be necessary.

1.2 Modifications of these procedures might be justified by special needs or circumstances. Although using appropriate procedures is more important than following prescribed procedures, the results of tests conducted using unusual procedures are not likely to be comparable to those of many other tests. Comparisons of results obtained using modified and unmodified versions of these procedures might provide useful information concerning new concepts and procedures for conducting acute, chronic, or life-cycle tests with other species of polychaetes.

1.3 These procedures are applicable to most chemicals, either individually or in formulations, commercial products, and known or unknown mixtures. With appropriate modifications, these procedures can be used to conduct these tests on factors such as temperature, salinity, and dissolved oxygen. These procedures can also be used to assess the toxicity of potentially toxic discharges such as municipal wastes, oil drilling fluids, produced water from oil well production, and other types of industrial wastes. An LC50 (medial lethal concentration) is calculated from the data generated in each acute and chronic toxicity test. Reproductive success and the number of offspring produced are used to measure the effect of a toxicant on life-cycle tests; data are analyzed statistically to indicate that concentration at which a significant difference occurs between the test solutions and control(s).

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1.4 The results of acute or chronic toxicity tests with toxicants added experimentally to salt water should usually be reported in terms of an LC50. The results of life-cycle toxicity tests with toxicants added experimentally to salt water should be reported as that concentration at which a statistically significant difference in the number of offspring is produced with reference to the control(s).

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