
**Water quality — Larval development
test with the harpacticoid copepod
*Nitocra spinipes***

*Qualité de l'eau — Essai de développement larvaire avec le
copépode harpacticoïde Nitocra spinipes*

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Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Terms and definitions	1
3 Principle	2
4 Reagents	2
5 Cultivation	3
5.1 Test organism	3
5.2 Algae for feeding	3
6 Apparatus	3
7 Procedure	4
7.1 Production of nauplii to be used in test	4
7.2 Choice of test concentrations	4
7.2.1 Hypothesis testing	5
7.2.2 Regression analysis	5
7.3 Preparation of solutions to be used in test	5
7.3.1 Stock solution	5
7.3.2 Test solutions	5
7.4 Start of test	6
7.5 Incubation/exposure	6
7.6 Maintenance	6
7.7 Measurements/observations	6
7.7.1 Mortality	6
7.7.2 Larval development ratio (LDR)	7
7.7.3 Physical-chemical parameters — oxygen, pH and salinity	7
7.7.4 Concentration of the test substance	7
8 Validity criteria	7
9 Evaluation of results	8
9.1 Calculation of results	8
9.2 Expression of results	8
9.3 Interpretation of results	8
10 Reproducibility	8
11 Test report	8
Annex A (informative) Biology and cultivation of <i>Nitocra spinipes</i>	10
Annex B (informative) <i>Nitocra spinipes</i> larval development ratio	15
Annex C (informative) Calculations	17
Bibliography	19

Foreword

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The committee responsible for this document is ISO/TC 147, *Water quality*, Subcommittee SC 5, *Biological methods*.

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Introduction

Harpacticoid copepods are predominantly benthic, occurring widely in marine, brackish and fresh water ecosystems. They represent important prey items for the benthic larvae of many fish species and larger invertebrates and constitute an ecologically important energy-transfer link between the organic phase of the sediment and higher trophic levels.

The euryhaline brackish water harpacticoid *Nitocra spinipes* (Crustacea) is a common component of the benthic meiofauna in shallow coastal waters around the world (see Reference [6]).

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WARNING — Persons using this Technical Specification should be familiar with normal laboratory practice. This Technical Specification does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and to ensure compliance with any national regulatory conditions.

IMPORTANT — It is absolutely essential that tests conducted in accordance with this Technical Specification be carried out by suitably qualified staff.

1 Scope

This Technical Specification specifies an early-life stage procedure for determination of the toxic effects of chemicals and water samples on a cold-water brackish water copepod species under semi-static conditions. The biological test variables include survival and development of the early-life stages. The exposure starts with newly hatched (<24 h) nauplii (larvae) and is continued until emergence of (c. 50 %) copepodites (juveniles) in the control.

The benthic living *Nitocra* complements the planktonic *Acartia* species in ISO 16778. These organisms represent different life-history strategies as *Nitocra* is egg-carrying, whereas *Acartia* is a broadcasting calanoid copepod and thus, different sensitivities of specific life stages. *Nitocra* is a fresh to brackish water species, which allows testing low salinity waters and is complementary to *A. tonsa*, which is of marine origin and poorly tolerates low salinities.

2 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

2.1

nauplii

larvae

2.2

copepodites

juveniles

2.3

larval development ratio

LDR

ratio of *copepodites* (2.2) to the total number of surviving early-life stages (nauplii + copepodites) at the end of the test

2.4

lowest observed effect concentration

LOEC

lowest concentration within the experimental range at which a significant effect is observed

2.5

no observed effect concentration

NOEC

tested concentration just below the LOEC (2.4)