PD ISO/TS 18220:2016

BSI Standards Publication

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

bsi.

National foreword

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The UK participation in its preparation was entrusted to Technical Committee EH/3/5, Biological Methods.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Published by BSI Standards Limited 2016

ISBN 978 0 580 82028 1

ICS 13.060.70

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This Published Document was published under the authority of the Standards Policy and Strategy Committee on 30 June 2016.

Amendments/corrigenda issued since publication

Date	Text affected

PD ISO/TS 18220:2016

TECHNICAL SPECIFICATION

ISO/TS 18220

First edition
2016-07-01

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

Reference number
ISO/TS 18220:2016(E)

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Foreword

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

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 harpactoid *Nitocra spinipes* (Crustacea) is a common component of the benthic meiofana 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)