

**Vee kvaliteet. Pseudomonas putida
kasvu pidurdamise katse
(Pseudomonase raku paljunemise
pidurdamise test)**

Water quality - Pseudomonas putida growth
inhibition test (Pseudomonas cell multiplication
inhibition test)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 10712:1999 sisaldab Euroopa standardi EN ISO 10712:1995 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 12.12.1999 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 10712:1999 consists of the English text of the European standard EN ISO 10712:1995.</p> <p>This document is endorsed on 12.12.1999 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala:</p> <p>Menetlus on testimismeetod vee, heitvee ja vees lahustavate ainete takistava toime määramiseks <i>Pseudomonas putida</i> toksilisuse hindamisel.</p>	<p>Scope:</p>
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ICS 13.060.70

Võtmesõnad: bioloogilised testid, kvaliteet, määramine, testid, toksilisus, turbidimeetriline analüüs, veetestid, vesi

ICS 07.100.20

Descriptors: Water quality, Pseudomonas, cell multiplication, inhibition test.

English version

Water quality

**Pseudomonas putida growth inhibition test
(Pseudomonas cell multiplication inhibition test)
(ISO 10712:1995)**

Qualité de l'eau; essai d'inhibition de la
croissance de Pseudomonas putida (essai
d'inhibition de la multiplication des cellules
de Pseudomonas) (ISO 10712:1995)

Wasserbeschaffenheit; Pseudomonas
putida Wachstumshemmtest (Pseudo-
monas-Zellvermehrungshemmtest)
(ISO 10712:1995)

This European Standard was approved by CEN on 1995-12-13 and is identical to the ISO Standard as referred to.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

Foreword

International Standard

ISO 10712:1995 Water quality; *Pseudomonas putida* growth inhibition test (*Pseudomonas* cell multiplication inhibition test),

which was prepared by ISO/TC 147 'Water quality' of the International Organization for Standardization, has been adopted by Technical Committee CEN/TC 230 'Water analysis' as a European Standard.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by June 1996 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard:

Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

Endorsement notice

The text of the International Standard ISO 10712:1995 was approved by CEN as a European Standard without any modification.

NOTE: Normative references to international publications are listed in Annex ZA (normative)

Introduction

The bacterium *Pseudomonas putida* is used as an organism representative of heterotrophic microorganisms in fresh water.

1 Scope

This International Standard specifies a test method for determining the inhibitory effect of surface, ground and waste water on *Pseudomonas putida*.

This method is not suitable for highly coloured test samples, or samples containing undissolved or volatile materials or substances which react with the nutrient solution, or which undergo changes during the test (for example by precipitation, or biochemical or photochemical degradation) and may give false results and/or impair the reproducibility.

The method is also suitable for testing substances soluble in water (see annex A).

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 7027:1990, *Water quality — Determination of turbidity*.

3 Definitions

For the purposes of this International Standard, the following definitions apply.

3.1 multiplication; growth: Increase in the number of cells during the test period.

3.2 concentration-effect relationship: Dependence of cell multiplication inhibition on the concentration of the test sample.

NOTE 1 The relationship is graphically represented by plotting the inhibition values along the ordinate against the sample concentrations along the abscissa.

3.3 effective concentration (EC): Concentration of the test sample giving a calculated or interpolated inhibition of cell multiplication of *Pseudomonas putida* within $16\text{ h} \pm 1\text{ h}$, compared to that of the control batch.

The concentrations of test samples (EC10 and EC50) are determined from the concentration-effect relationship (3.2) at which cell multiplication is inhibited by 10 % or 50 % respectively, compared to that of the control batch.

3.4 stock culture: Bacterial culture obtained from the collection strain of the laboratory and intended to provide an inoculum for the preculture in the test procedure.

3.5 preculture: Bacterial culture separately used to adapt the test bacteria to the test conditions and to produce an adequate number of exponentially multiplying bacteria as an inoculum for the test culture.

3.6 test culture: Inoculated test medium (3.9).

3.7 inoculum: Suspension of bacteria used to inoculate a nutrient solution.