

Water quality - Evaluation of ultimate aerobic biodegradability of organic compounds in aqueous medium - Method by analysis of inorganic carbon in sealed vessels (CO₂ headspace test)

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 14593:2005 sisaldab Euroopa standardi EN ISO 14593:2005 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 29.08.2005 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 14593:2005 consists of the English text of the European standard EN ISO 14593:2005.</p> <p>This document is endorsed on 29.08.2005 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: This International Standard specifies a method, by analysis of inorganic carbon, for the evaluation in an aqueous medium of the ultimate aerobic biodegradability of organic substances at a given concentration of microorganisms.</p>	<p>Scope: This International Standard specifies a method, by analysis of inorganic carbon, for the evaluation in an aqueous medium of the ultimate aerobic biodegradability of organic substances at a given concentration of microorganisms.</p>
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English version

Water quality - Evaluation of ultimate aerobic biodegradability of organic compounds in aqueous medium - Method by analysis of inorganic carbon in sealed vessels (CO₂ headspace test) (ISO 14593:1999)

Qualité de l'eau - Evaluation en milieu aqueux de la biodégradabilité aérobie ultime des composés organiques - Méthode par analyse du carbone inorganique dans des récipients hermétiquement clos (Essai au CO₂ dans l'espace de tête) (ISO 14593:1999)

Wasserbeschaffenheit - Bestimmung der vollständigen biologischen Abbaubarkeit organischer Substanzen im wässrigen Medium - Verfahren mittels Bestimmung des anorganischen Kohlenstoffs in geschlossenen Flaschen (CO₂-Headspace-Test) (ISO 14593:1999)

This European Standard was approved by CEN on 25 May 2005.

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.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

The text of ISO 14593:1999 has been prepared by Technical Committee ISO/TC 147 "Water quality" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 14593:2005 by Technical Committee CEN/TC 230 "Water analysis", the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by December 2005, and conflicting national standards shall be withdrawn at the latest by December 2005.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Endorsement notice

The text of ISO 14593:1999 has been approved by CEN as EN ISO 14593:2005 without any modifications.

Water quality — Evaluation of ultimate aerobic biodegradability of organic compounds in aqueous medium — Method by analysis of inorganic carbon in sealed vessels (CO₂ headspace test)

Qualité de l'eau — Évaluation en milieu aqueux de la biodégradabilité aérobie ultime des composés organiques — Méthode par analyse du carbone inorganique dans des récipients hermétiquement clos (Essai au CO₂ dans l'espace de tête)



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 14593 was prepared by Technical Committee ISO/TC 147, *Water quality*, Subcommittee SC 5, *Biological methods*.

Annexes A, B and C of this International Standard are for information only.

Water quality — Evaluation of ultimate aerobic biodegradability of organic compounds in aqueous medium — Method by analysis of inorganic carbon in sealed vessels (CO₂ headspace test)

WARNING — Activated sludge and sewage may contain potentially pathogenic organisms and should be handled with appropriate precautions. Hazardous test compounds and those whose properties are unknown should be handled with care.

1 Scope

This International Standard specifies a method, by analysis of inorganic carbon, for the evaluation in an aqueous medium of the ultimate aerobic biodegradability of organic substances at a given concentration of microorganisms.

This International Standard is applicable to organic compounds which are:

- a) water-soluble under the test conditions;
- b) poorly water-soluble under the test conditions, in which case special measures may be necessary to achieve a good dispersion of the compound (see ISO 10634);
- c) volatile;
- d) not inhibitory to the test microorganisms at the concentration chosen for the test.

In this test, biogenically produced inorganic carbon is measured *in situ* in the test vessels in such a manner that the rate measured nearly equals the rate of microbial production.

NOTE 1 The conditions described in this International Standard do not always correspond to the optimal conditions for allowing the maximum degree of biodegradation to occur. For alternative biodegradation methods see ISO 15462.

NOTE 2 With highly volatile substances, losses to the gaseous phase can be minimized by reducing the volume of the headspace. However, there should be sufficient oxygen in the test system to prevent biodegradation being oxygen-limited.

NOTE 3 The presence of an inhibitory effect can be determined as specified in 8.3, or by using any other method for determining the inhibitory effect of a substance on bacteria (see, for example, ISO 8192).

2 Normative reference

The following normative document contains provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the normative document indicated below. For undated reference, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 10634:1995, *Water quality — Guidance for the preparation and treatment of poorly water-soluble organic compounds for the subsequent evaluation of their biodegradability in aqueous medium.*