



SLOVENSKI STANDARD
SIST EN ISO 17993:2004

01-februar-2004

?U_cj cghj cXYË8c`c Yj Ub^% `dc`W_] b\ `Ufca Uhg_] `c[`1_cj cX]_cj `fD5<Lj
j cX]g`h\ b]_c`<D@ `g`Zi cfYgWb bc`XYh`W`c`dc`Y_glfU_W]`h`c Y!h`c Yf!GC
%a--'.&\$ \$&L

Water quality - Determination of 15 polycyclic aromatic hydrocarbons (PAH) in water by HPLC with fluorescence detection after liquid-liquid extraction (ISO 17993:2002)

Wasserbeschaffenheit - Bestimmung von 15 polycyclischen aromatischen Kohlenwasserstoffen (PAK) in Wasser durch HPLC mit Fluoreszenzdetektion nach Flüssig-Flüssig-Extraktion (ISO 17993:2002)

Qualité de l'eau - Dosage de 15 hydrocarbures aromatiques polycycliques (HAP) dans l'eau par HPLC avec détection par fluorescence après extraction liquide-liquide (ISO 17993:2002)

Ta slovenski standard je istoveten z: EN ISO 17993:2003

ICS:

13.060.50 Ú!^ã \ æ æ[â^Á æ ^{ ã } ^ Examination of water for chemical substances
•}[çã

SIST EN ISO 17993:2004 en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 17993:2004

<https://standards.iteh.ai/catalog/standards/sist/9156b1af-735c-47f0-8a17-3c23cf51cdf/sist-en-iso-17993-2004>

ICS 13.060.50

English version

Water quality - Determination of 15 polycyclic aromatic hydrocarbons (PAH) in water by HPLC with fluorescence detection after liquid-liquid extraction (ISO 17993:2002)

Qualité de l'eau - Dosage de 15 hydrocarbures aromatiques polycycliques (HAP) dans l'eau par HPLC avec détection par fluorescence après extraction liquide-liquide (ISO 17993:2002)

Wasserbeschaffenheit - Bestimmung von 15 polycyclischen aromatischen Kohlenwasserstoffen (PAK) in Wasser durch HPLC mit Fluoreszenzdetektion nach Flüssig-Flüssig-Extraktion (ISO 17993:2002)

This European Standard was approved by CEN on 3 November 2003.

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 Management Centre 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 Management Centre has the same status as the official versions.

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



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

Management Centre: rue de Stassart, 36 B-1050 Brussels

Foreword

The text of ISO 17993:2002 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 17993:2003 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 May 2004, and conflicting national standards shall be withdrawn at the latest by May 2004.

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

Endorsement notice

The text of ISO 17993:2002 has been approved by CEN as EN ISO 17993:2003 without any modifications.

NOTE Normative references to International Standards are listed in Annex ZA (normative).

<https://standards.iteh.ai/catalog/standards/sist/9156b1af-735c-47f0-8a17-3c23cf51cdf/sist-en-iso-17993-2004>

Annex ZA (normative)

Normative references to international publications with their relevant European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE Where an International Publication has been modified by common modifications, indicated by (mod.), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN</u>	<u>Year</u>
ISO 5667-2	1991	Water quality - Sampling - Part 2: Guidance on sampling techniques	EN 25667-2	1993
ISO 5667-3	1994	Water quality - Sampling - Part 3: Guidance on the preservation and handling of samples	EN ISO 5667-3	1995

[SIST EN ISO 17993:2004](https://standards.iteh.ai/catalog/standards/sist/9156b1af-735c-47f0-8a17-3c23cf51cdf/sist-en-iso-17993-2004)

<https://standards.iteh.ai/catalog/standards/sist/9156b1af-735c-47f0-8a17-3c23cf51cdf/sist-en-iso-17993-2004>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 17993:2004

<https://standards.iteh.ai/catalog/standards/sist/9156b1af-735c-47f0-8a17-3c23cf51cdf/sist-en-iso-17993-2004>

**Water quality — Determination of 15
polycyclic aromatic hydrocarbons (PAH) in
water by HPLC with fluorescence detection
after liquid-liquid extraction**

*Qualité de l'eau — Dosage de 15 hydrocarbures aromatiques polycycliques
(HAP) dans l'eau par HPLC avec détection par fluorescence après
extraction liquide-liquide*

iTeh STANDARD REVIEW
(standards.iteh.ai)

[SIST EN ISO 17993:2004](https://standards.iteh.ai/catalog/standards/sist/9156b1af-735c-47f0-8a17-3c23cf51cdf/sist-en-iso-17993-2004)

<https://standards.iteh.ai/catalog/standards/sist/9156b1af-735c-47f0-8a17-3c23cf51cdf/sist-en-iso-17993-2004>



PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN ISO 17993:2004](#)

<https://standards.iteh.ai/catalog/standards/sist/9156b1af-735c-47f0-8a17-3c23cfa51cdf/sist-en-iso-17993-2004>

© ISO 2002

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.ch
Web www.iso.ch

Printed in Switzerland

Contents

	Page
Foreword	iv
Introduction.....	v
1 Scope	1
2 Normative references.....	1
3 Principle	1
4 Interferences	3
5 Reagents	4
6 Apparatus.....	5
7 Sampling	6
8 Procedure.....	6
9 Calculation	11
10 Precision	11
11 Test report.....	13
Annex A (informative) Examples of chromatographic conditions and columns	14
Annex B (informative) Examples for the construction of special apparatus.....	18

iTeh STANDARD PREVIEW

(standards.iteh.ai)

[SIST EN ISO 17993:2004](https://standards.iteh.ai/catalog/standards/sist/9156b1af-735c-47f0-8a17-3c23cfa51cdf/sist-en-iso-17993-2004)

<https://standards.iteh.ai/catalog/standards/sist/9156b1af-735c-47f0-8a17-3c23cfa51cdf/sist-en-iso-17993-2004>

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.

The main task of technical committees is to prepare International Standards. 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.

Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 17993 was prepared by Technical Committee ISO/TC 147, *Water quality*, Subcommittee SC 2, *Physical, chemical and biochemical methods*.

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

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN ISO 17993:2004](https://standards.iteh.ai/catalog/standards/sist/9156b1af-735c-47f0-8a17-3c23cf51cdf/sist-en-iso-17993-2004)

<https://standards.iteh.ai/catalog/standards/sist/9156b1af-735c-47f0-8a17-3c23cf51cdf/sist-en-iso-17993-2004>

Introduction

Polycyclic aromatic hydrocarbons (PAH) occur in nearly all types of waters. These compounds are adsorbed on solids (sediments, suspended matter) as well as dissolved in the liquid phase.

Some PAH are known or suspected to cause cancer. The Council Directive 98/83/EC on the quality of water intended for human consumption set the maximum acceptable level for benzo(a)pyrene at 0,010 µg/l, and for the sum of four specified PAH [benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(ghi)perylene, indeno(1,2,3-cd)-pyrene] at 0,100 µg/l.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN ISO 17993:2004](https://standards.iteh.ai/catalog/standards/sist/9156b1af-735c-47f0-8a17-3c23cf51cdf/sist-en-iso-17993-2004)

<https://standards.iteh.ai/catalog/standards/sist/9156b1af-735c-47f0-8a17-3c23cf51cdf/sist-en-iso-17993-2004>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 17993:2004

<https://standards.iteh.ai/catalog/standards/sist/9156b1af-735c-47f0-8a17-3c23cf51cdf/sist-en-iso-17993-2004>