



SLOVENSKI STANDARD SIST EN ISO 10695:2000

01-december-2000

Kakovost vode - Določevanje izbranih organskih dušikovih in fosfornih spojin - Metoda plinske kromatografije (ISO 10695:2000)

Water quality - Determination of selected organic nitrogen and phosphorus compounds - Gas chromatographic methods (ISO 10695:2000)

Wasserbeschaffenheit - Bestimmung ausgewählter organischer Stickstoff- und Phosphorverbindungen - Gaschromatographische Verfahren (ISO 10695:2000)

Qualité de l'eau - Dosage de certains composés organiques azotés et phosphorés sélectionnés - Méthodes par chromatographie en phase gazeuse (ISO 10695:2000)

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Ta slovenski standard je istoveten z: EN ISO 10695:2000

ICS:

13.060.70	Preiskava bioloških lastnosti vode	Examination of biological properties of water
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en

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EUROPEAN STANDARD

EN ISO 10695

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 2000

ICS 13.060

English version

Water quality - Determination of selected organic nitrogen and phosphorus compounds - Gas chromatographic methods (ISO 10695:2000)

Qualité de l'eau - Dosage de certains composés organiques azotés et phosphorés sélectionnés - Méthodes par chromatographie en phase gazeuse (ISO 10695:2000)

Wasserbeschaffenheit - Bestimmung ausgewählter organischer Stickstoff- und Phosphorverbindungen - Gaschromatographische Verfahren (ISO 10695:2000)

This European Standard was approved by CEN on 25 February 2000.

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

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

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EN ISO 10695:2000

Foreword

Corrected 2000-08-17

The text of the International Standard ISO 10695:2000 has been prepared by Technical Committee ISO/TC 147 "Water quality" in collaboration with 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 October 2000, and conflicting national standards shall be withdrawn at the latest by October 2000.

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, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 10695:2000 was approved by CEN as a European Standard without any modification.

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

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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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN</u>	<u>Year</u>
ISO 5667-1	1980	Water quality - Sampling - Part 1: Guidance on the design of sampling programmes	EN 25667-1	1993
ISO 5667-2	1991	Water quality - Sampling - Part 2: Guidance on sampling techniques	EN 25667-2	1993
ISO/TR 13530	1997	Water quality - Guide to analytical quality control for water analysis	ENV ISO 13530	1998

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INTERNATIONAL STANDARD

ISO 10695

First edition
2000-04-01

Water quality — Determination of selected organic nitrogen and phosphorus compounds — Gas chromatographic methods

*Qualité de l'eau — Dosage de certains composés organiques azotés et
phosphorés sélectionnés — Méthodes par chromatographie en phase
gazeuse*

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ISO 10695:2000(E)**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.

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.

International Standard ISO 10695 was prepared by Technical Committee ISO/TC 147, *Water quality*, Subcommittee SC 2, *Physical, chemical and biochemical methods*.

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

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Water quality — Determination of selected organic nitrogen and phosphorus compounds — Gas chromatographic methods

WARNING — This International Standard makes use of flammable and toxic organic solvents and some toxic organic and phosphorus compounds. Observe the safety regulations in effect.

1 Scope

This International Standard specifies two methods for the determination of certain organic nitrogen and phosphorus compounds in waters by gas chromatography (see Table 1).

The methods may be extended to include additional substances, provided the methods are validated for each individual case.

Clause 3 describes the liquid/liquid extraction method, which is applicable to samples of drinking waters, ground waters, surface waters and waste waters containing up to 0,05 g/l of suspended solids. In the presence of organic matter, suspended matter and colloids, interferences are more numerous and consequently the detection limits of this method can be higher.

NOTE Because of the very low concentrations normally present in the waters, the problem of contamination is extremely important. The lower the level measured, the more precautions have to be observed.

Clause 4 describes the liquid/solid extraction method which is applicable to samples of ground water, surface water and drinking water containing mass concentrations of about $\geq 0,05 \mu\text{g/l}$. Interferences occurring with the examination of some types of surface water can prevent the application of this method.

Detection limits are given for information in annex A.

NOTE When applying this International Standard, the guide on analytical quality control for water analysis (see ISO/TR 13530) should be followed.

Table 1 — Organic nitrogen and phosphorus compounds analysed by these methods

Name	Molecular formula	Molar mass	CAS No. ^a
Atrazine	C ₈ H ₁₄ ClN ₅	215,7	001912-24-9
Cyanazine	C ₉ H ₁₃ ClN ₆	240,7	021725-46-2
Metazachlor	C ₁₄ H ₁₆ ClN ₃ O	277,8	067129-08-2
Parathion (ethyl)	C ₁₀ H ₁₄ NO ₅ PS	291,3	00056-38-2
Parathion (methyl)	C ₈ H ₁₀ NO ₅ PS	263,2	298-00-0
Pendimethalin	C ₁₃ H ₁₉ N ₃ O ₄	281,3	040487-42-1
Propazine	C ₉ H ₁₆ ClN ₅	229,7	000139-40-2
Sebuthylazine	C ₉ H ₁₆ ClN ₅	229,7	007286-69-3
Simazine	C ₇ H ₁₂ ClN ₅	201,7	000122-34-9
Terbuthylazine	C ₉ H ₁₆ ClN ₅	229,7	005915-41-3
Trifluralin	C ₁₃ H ₁₆ F ₃ N ₃ O ₄	335,3	001582-09-8
Vinclozolin	C ₁₂ H ₉ Cl ₂ NO ₃	286,1	050471-44-8

^a Chemical Abstracts Registry Number.

2 Normative references

The following normative documents contain 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 editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 5667-1:1980, *Water quality — Sampling — Part 1: Guidance on the design of sampling programmes*.

ISO 5667-2:1991, *Water quality — Sampling — Part 2: Guidance on sampling techniques*.

ISO/TR 13530:1997, *Water quality — Guide to analytical quality control for water analysis*.

3 Liquid/liquid extraction

3.1 Principle

The organic nitrogen and phosphorus compounds in the water sample are extracted by liquid-liquid extraction with dichloromethane. After concentration, the sample extracts are analysed by gas chromatography, using a nitrogen-phosphorus detector.

3.2 Reagents

All reagents, including water, shall be of sufficient purity that they do not give rise to significant interfering peaks in the gas chromatograms of the blanks. The purity of reagents used in the procedure shall be verified for each batch of material by running blank determinations (3.5.6).

Reagents shall be stored in glass containers.