

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

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nitrogen and phosphorus compounds - Gas
chromatographic methods

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 10695:2000 sisaldab Euroopa standardi EN ISO 10695:2000 ingliskeelset teksti. Käesolev dokument on jõustatud 12.09.2000 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN ISO 10695:2000 consists of the English text of the European standard EN ISO 10695:2000. This document is endorsed on 12.09.2000 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.
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Käsitlusala: This standard specifies two methods for the determination of certain organic nitrogen and phosphorus compounds in water by gas chromatography.	Scope: This standard specifies two methods for the determination of certain organic nitrogen and phosphorus compounds in water by gas chromatography.
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ICS 13.060

Võtmesõnad:

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 –
Gaschromatographisches Verfahren
(ISO 10695 : 2000)

This European Standard was approved by CEN on 2000-02-25.

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.

The European Standards exist 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, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the 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 10695 : 2000 Water quality – Determination of selected organic nitrogen and phosphorus compounds – Gas chromatographic methods,

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', the Secretariat of which is held by DIN, 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 October 2000 at the latest.

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

Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the 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.

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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 ₁₆ 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.