

**Water quality - Determination of six  
complexing agents - Gaschromatographic  
method**

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## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 16588:2004 sisaldab Euroopa standardi EN ISO 16588:2003 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 20.02.2004 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 16588:2004 consists of the English text of the European standard EN ISO 16588:2003.</p> <p>This document is endorsed on 20.02.2004 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><b>Käsitlusala:</b></p> <p>This International Standard specifies a method for the determination of the water-soluble organic complexing agents listed in Table 1 in the concentration range from 0,5 ug/l to 200 ug/l, if a sample volume between 50 ml and 100 ml is used.</p>	<p><b>Scope:</b></p> <p>This International Standard specifies a method for the determination of the water-soluble organic complexing agents listed in Table 1 in the concentration range from 0,5 ug/l to 200 ug/l, if a sample volume between 50 ml and 100 ml is used.</p>
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ICS 13.060.50

Võtmesõnad:

**English version**

**Water quality – Determination of six complexing agents**

Gas-chromatographic method

(ISO 16588 : 2002)

Qualité de l'eau – Dosage des agents  
complexants – Méthode par chromato-  
graphie en phase gazeuse  
(ISO 16588 : 2002)

Wasserbeschaffenheit – Bestimmung  
von sechs Komplexbildnern – Gas-  
chromatographisches Verfahren  
(ISO 16588 : 2002)

This European Standard was approved by CEN on 2003-11-03.

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.

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 Management Centre 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, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, the Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland, and the United Kingdom.

**CEN**

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

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

## Foreword

International Standard

ISO 16588 : 2002 Water quality – Determination of six complexing agents – Gas-chromatographic method, 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 May 2004 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, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, the Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland, and the United Kingdom.

## Endorsement notice

The text of the International Standard ISO 16588 : 2002 was approved by CEN as a European Standard without any modification.

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

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## Introduction

It is essential that the test described in this International Standard be carried out by suitably qualified staff.

It should be investigated whether and to what extent particular problems will require the specification of additional conditions.

**WARNING** — Persons using this International Standard should be familiar with normal laboratory practice. This standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and to ensure compliance with any national regulatory conditions.

## 1 Scope

This International Standard specifies a method for the determination of the water-soluble organic complexing agents listed in Table 1 in the concentration range from 0,5 µg/l to 200 µg/l, if a sample volume between 50 ml and 100 ml is used. The concentration range may change if diluted solutions are analysed. The method is applicable to drinking, ground, surface and waste water.

**Table 1 — Complexing agents determinable by this method**

No.	Name	Composition	Molecular mass	CAS number <sup>a</sup>
1	EDTA — ethylenedinitrilotetraacetic acid	C <sub>10</sub> H <sub>16</sub> O <sub>8</sub> N <sub>2</sub>	292,25	60-00-4
2	NTA — nitrilotriacetic acid	C <sub>6</sub> H <sub>9</sub> O <sub>6</sub> N	191,14	139-13-9
3	DTPA — diethylenetrinitrilopentaacetic acid	C <sub>14</sub> H <sub>23</sub> O <sub>10</sub> N <sub>3</sub>	393,35	67-43-6
4	MGDA — methylglycinediacetic acid	C <sub>7</sub> H <sub>11</sub> O <sub>6</sub> N	205,17	29578-05-0
5	β-ADA — β-alaninediacetic acid	C <sub>7</sub> H <sub>11</sub> O <sub>6</sub> N	205,17	6245-75-6
6	1,3-PDTA — 1,3-propylenedinitrilotetraacetic acid	C <sub>11</sub> H <sub>18</sub> O <sub>8</sub> N <sub>2</sub>	306,27	1939-36-2

<sup>a</sup> CAS: Chemical Abstracts System

In waste water analysis, it is recommended that a smaller sample volume, e.g. 5 ml or 10 ml, be used in order to reduce matrix effects.

The adsorption of the six complexing agents on solid materials is negligibly low.

Other complexing agents of similar composition may also be determined using this method, provided they behave similarly during sample pretreatment, derivatization and gas chromatography. This shall be checked in each individual case.

## 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 3696:1987, *Water for analytical laboratory use — Specification and test methods*

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*