

# INTERNATIONAL STANDARD

# ISO 16588

First edition  
2002-11-01

**AMENDMENT 1**  
2004-05-01

---

---

## Water quality — Determination of six complexing agents — Gas-chromatographic method

### AMENDMENT 1

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

*Qualité de l'eau — Dosage de six agents complexants — Méthode par  
chromatographie en phase gazeuse*  
**AMENDEMENT 1**

[ISO 16588:2002/Amd 1:2004](https://standards.iteh.ai/catalog/standards/sist/36150405-c352-477b-8ca3-bf05d31165fc/iso-16588-2002-amd-1-2004)

[https://standards.iteh.ai/catalog/standards/sist/36150405-c352-477b-8ca3-  
bf05d31165fc/iso-16588-2002-amd-1-2004](https://standards.iteh.ai/catalog/standards/sist/36150405-c352-477b-8ca3-bf05d31165fc/iso-16588-2002-amd-1-2004)



Reference number  
ISO 16588:2002/Amd.1:2004(E)

© ISO 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)**

[ISO 16588:2002/Amd 1:2004](https://standards.iteh.ai/catalog/standards/sist/36150405-c352-477b-8ca3-bf05d31165fc/iso-16588-2002-amd-1-2004)  
<https://standards.iteh.ai/catalog/standards/sist/36150405-c352-477b-8ca3-bf05d31165fc/iso-16588-2002-amd-1-2004>

© ISO 2004

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.org](mailto:copyright@iso.org)  
Web [www.iso.org](http://www.iso.org)

Published in Switzerland

## 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 2.

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 document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

Amendment 1 to ISO 16588:2002 was prepared by Technical Committee ISO/TC 147, *Water quality*, Subcommittee SC 2, *Physical, chemical and biochemical methods*.

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[ISO 16588:2002/Amd 1:2004](https://standards.iteh.ai/catalog/standards/sist/36150405-c352-477b-8ca3-bf05d31165fc/iso-16588-2002-amd-1-2004)

<https://standards.iteh.ai/catalog/standards/sist/36150405-c352-477b-8ca3-bf05d31165fc/iso-16588-2002-amd-1-2004>

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[ISO 16588:2002/Amd 1:2004](https://standards.iteh.ai/catalog/standards/sist/36150405-c352-477b-8ca3-bf05d31165fc/iso-16588-2002-amd-1-2004)

<https://standards.iteh.ai/catalog/standards/sist/36150405-c352-477b-8ca3-bf05d31165fc/iso-16588-2002-amd-1-2004>

# Water quality — Determination of six complexing agents — Gas-chromatographic method

## AMENDMENT 1

*Page 9, Clause 10*

Add the following after Clause 9 and renumber the subsequent clauses accordingly:

**“10 Precision**

Results from an interlaboratory trial are given for information in Annex B.”

*Page 12, Annex B*

Add the following after Annex A.

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[ISO 16588:2002/Amd 1:2004](https://standards.iteh.ai/catalog/standards/sist/36150405-c352-477b-8ca3-bf05d31165fc/iso-16588-2002-amd-1-2004)  
<https://standards.iteh.ai/catalog/standards/sist/36150405-c352-477b-8ca3-bf05d31165fc/iso-16588-2002-amd-1-2004>

**Annex B**  
(informative)

**Results of an interlaboratory trial**

The results of an interlaboratory trial carried out in Germany are given in Table B.1.

**Table B.1 — Interlaboratory trial data**

Sample	Compound	<i>l</i>	<i>n</i>	<i>o</i> %	$x_{corr}$ μg/l	$\bar{X}$ μg/l	$\eta$ %	$s_R$ μg/l	$CV_R$ %	$s_r$ μg/l	$CV_r$ %
1	EDTA	11	41	18,0	1,2	1,3	106,9	0,24	19,1	0,16	12,3
	NTA	12	46	0,0	1,8	1,8	99,6	0,55	30,6	0,17	9,6
	DTPA	8	28	12,5	2,5	1,8	72,7	1,00	54,9	0,49	27,1
	MGDA	9	34	19,0	2,1	2,3	107,4	0,53	23,3	0,24	10,6
	$\beta$ -ADA	10	38	5,0	1,9	2,0	106,2	1,09	54,2	0,23	11,3
	1,3-PDTA	7	26	35,0	2,0	1,5	76,2	0,35	22,7	0,30	19,6
2	EDTA	13	50	0,0	—	3,9	—	1,18	30,4	0,37	9,5
	NTA	10	38	9,5	—	1,0	—	0,35	36,8	0,08	8,5
	DTPA	4	15	21,1	—	0,7	—	0,15	21,3	0,10	13,9
	MGDA	—	—	—	—	—	—	—	—	—	—
	$\beta$ -ADA	—	—	—	—	—	—	—	—	—	—
	1,3-PDTA	5	18	18,2	—	0,6	—	0,14	22,7	0,06	9,3
3	EDTA	12	46	8,0	2,0	3,6	182,0	1,11	30,5	0,31	8,6
	NTA	11	40	16,7	3,8	3,6	94,6	0,89	24,7	0,20	5,5
	DTPA	8	30	0,0	2,5	2,0	81,7	0,61	29,8	0,26	12,8
	MGDA	9	34	19,0	4,7	4,2	90,1	1,72	40,5	0,28	6,6
	$\beta$ -ADA	11	42	0,0	3,9	3,4	87,7	1,37	39,9	0,31	9,1
	1,3-PDTA	9	34	10,5	4,0	3,5	88,1	1,34	37,9	0,34	9,6
4	EDTA	11	42	16,0	—	15,8	—	7,51	47,5	1,26	8,0
	NTA	11	42	8,7	—	4,5	—	1,36	30,4	0,42	9,4
	DTPA	8	29	3,3	5,3	3,2	59,8	1,98	62,5	0,29	9,2
	MGDA	5	17	0,0	—	0,6	—	0,23	37,9	0,10	15,6
	$\beta$ -ADA	9	32	20,0	4,9	5,6	113,5	2,97	53,4	0,38	6,9
	1,3-PDTA	—	—	—	—	—	—	—	—	—	—

where

<i>l</i>	is the number of received laboratory sets (including outliers);	$\eta$	is the recovery rate;
<i>n</i>	is the number of outlier-free individual analytical values;	$s_R$	is the reproducibility standard deviation;
<i>o</i>	is the relative portion of outliers;	$CV_R$	is the reproducibility coefficient of variation;
$x_{corr}$	is the correct value by convention;	$s_r$	is the repeatability standard deviation;
$\bar{X}$	is the total mean, depending on outlier-free values;	$CV_r$	is the repeatability coefficient of variation.

Sample:

- 1 Drinking water, spiked.
- 2 Surface water (Donau).
- 3 Surface water (Isar), spiked.
- 4 Effluent treatment plant Munich, spiked.

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[ISO 16588:2002/Amd 1:2004](https://standards.iteh.ai/catalog/standards/sist/36150405-c352-477b-8ca3-bf05d31165fc/iso-16588-2002-amd-1-2004)

<https://standards.iteh.ai/catalog/standards/sist/36150405-c352-477b-8ca3-bf05d31165fc/iso-16588-2002-amd-1-2004>

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[ISO 16588:2002/Amd 1:2004](https://standards.iteh.ai/catalog/standards/sist/36150405-c352-477b-8ca3-bf05d31165fc/iso-16588-2002-amd-1-2004)  
[https://standards.iteh.ai/catalog/standards/sist/36150405-c352-477b-8ca3-  
bf05d31165fc/iso-16588-2002-amd-1-2004](https://standards.iteh.ai/catalog/standards/sist/36150405-c352-477b-8ca3-bf05d31165fc/iso-16588-2002-amd-1-2004)

---

---

**ICS 13.060.50**

Price based on 2 pages