DIN EN ISO 5667-3

ICS 13.060.45

Supersedes
DIN EN ISO 5667-3:2013-03

Water quality –
Sampling –
Part 3: Preservation and handling of water samples (ISO 5667-3:2018);
English version EN ISO 5667-3:2018,
English translation of DIN EN ISO 5667-3:2019-07

Wasserbeschaffenheit –
Probenahme –
Teil 3: Konservierung und Handhabung von Wasserproben (ISO 5667-3:2018);
Englische Fassung EN ISO 5667-3:2018,
Englische Übersetzung von DIN EN ISO 5667-3:2019-07

Qualité de l'eau –
Échantillonnage –
Partie 3: Conservation et manipulation des échantillons d'eau (ISO 5667-3:2018);
Version anglaise EN ISO 5667-3:2018,
Traduction anglaise de DIN EN ISO 5667-3:2019-07

Document comprises 67 pages

Translation by DIN-Sprachendienst.

In case of doubt, the German-language original shall be considered authoritative.

07.19 3070937

A comma is used as the decimal marker.

National foreword

This document (EN ISO 5667-3:2018) has been prepared by Technical Committee ISO/TC 147 "Water quality" in collaboration with Technical Committee CEN/TC 230 "Water analysis" (Secretariat: DIN, Germany).

The responsible German body involved in its preparation was *DIN-Normenausschuss Wasserwesen* (DIN Standards Committee Water Practice), Subcommittee NA 119-01-03-09 UA "Sampling" of Working Committee NA 119-01-03 AA "Water examination".

ISO 5667 consists of the following parts, under the general title *Water quality — Sampling:*

— *Part 1: Guidance on the design of sampling programmes and sampling techniques*

— *Part 3: Preservation and handling of water samples*

— *Part 4: Guidance on sampling from lakes, natural and man-made*

— *Part 5: Guidance on sampling of drinking water from treatment works and piped distribution systems*

— *Part 6: Guidance on sampling of rivers and streams*

— *Part 7: Guidance on sampling of water and steam in boiler plants*

— *Part 8: Guidance on the sampling of wet deposition*

— *Part 9: Guidance on sampling from marine waters*

— *Part 10: Guidance on sampling of waste waters*

— *Part 11: Guidance on sampling of groundwaters*

— *Part 12: Guidance on sampling of bottom sediments from rivers, lakes and estuarine areas*

— *Part 13: Guidance on sampling of sludges*

— *Part 14: Guidance on quality assurance and quality control of environmental water sampling and handling*

— *Part 15: Guidance on the preservation and handling of sludge and sediment samples*

— *Part 16: Guidance on biotesting of samples*

— *Part 17: Guidance on sampling of bulk suspended solids*

— *Part 19: Guidance on sampling of marine sediments*

— *Part 20: Guidance on the use of sampling data for decision making - Compliance with thresholds and classification systems*

— *Part 21: Guidance on sampling of drinking water distributed by tankers or means other than distribution pipes*

— *Part 22: Guidance on the design and installation of groundwater monitoring points*

— *Part 23: Guidance on passive sampling in surface waters*

— *Part 24: Guidance on the auditing of water quality sampling*

Designation of the method:

Preservation and handling of water samples (A 21):

Method DIN EN ISO 5667-3 — A 21

The DIN documents corresponding to the international documents referred to in this document are as follows:

ISO 3696	DIN ISO 3696
ISO 5667 (all parts)	DIN EN ISO 5667 (all parts)
ISO 5814:2012	DIN EN ISO 5814:2013-02
ISO 5961:1994	DIN EN ISO 5961:1995-05
ISO 6468:1996	DIN EN ISO 6468:1997-02
ISO 6878:2004	DIN EN ISO 6878:2004-09
ISO 7027-1:2016	DIN EN ISO 7027-1:2016-11
ISO 7887:2011	DIN EN ISO 7887:2012-04
ISO 7980:1986	DIN EN ISO 7980:2000-07
ISO 8467:1993	DIN EN ISO 8467:1995-05
ISO 9377-2:2000	DIN EN ISO 9377-2:2001-07
ISO 9439:1999	DIN EN ISO 9439:2000-10
ISO 9562:2004	DIN EN ISO 9562:2005-02
ISO 9963-1:1994	DIN EN ISO 9963-1:1996-02
ISO 9964-3:1993	DIN ISO 9964-3:1996-08
ISO 10304-1:2007	DIN EN ISO 10304-1:2009-07
ISO 10304-3:1997	DIN EN ISO 10304-3:1997-11
ISO 10304-4:1997	DIN EN ISO 10304-4:1999-07
ISO 10523:2008	DIN EN ISO 10523:2012-04
ISO 10566:1994	DIN ISO 10566:1999-04
ISO 10695:2000	DIN EN ISO 10695:2000-11
ISO 11074:2015	DIN EN ISO 11074:2015-11
ISO 11369:1997	DIN EN ISO 11369:1997-11
ISO 11732:2005	DIN EN ISO 11732:2005-05
ISO 11885:2007	DIN EN ISO 11885:2009-09
ISO 12010:2012	DIN EN ISO 12010:2019-12
ISO 12020:1997	DIN EN ISO 12020:2000-05
ISO 12846:2012	DIN EN ISO 12846:2012-08
ISO 13395:1996	DIN EN ISO 13395:1996-12
ISO 14402:1999	DIN EN ISO 14402:1999-12
ISO 14403-1:2012	DIN EN ISO 14403-1:2012-10
ISO 14403-2:2012	DIN EN ISO 14403-2:2012-10
ISO 14911:1998	DIN EN ISO 14911:1999-12
ISO 15061:2001	DIN EN ISO 15061:2001-12
ISO 15586:2003	DIN EN ISO 15586:2004-02
ISO 15680:2003	DIN EN ISO 15680:2004-04
ISO 15681-1:2003	DIN EN ISO 15681-1:2005-05
ISO 15681-2:2003	DIN EN ISO 15681-2:2005-05
ISO 15682:2000	DIN EN ISO 15682:2002-01
ISO 15705:2002	DIN ISO 15705:2003-01
ISO 15913:2000	DIN EN ISO 15913:2003-05
ISO 15923-1:2013	DIN ISO 15923-1:2014-07
ISO 16264:2002	DIN EN ISO 16264:2004-05

ISO 16308:2014	DIN ISO 16308:2017-09
ISO/TS 16780:2015	DIN ISO/TS 16780:2018-07
ISO 17034	DIN EN ISO 17034
ISO 17289:2014	DIN ISO 17289:2014-12
ISO 17294-2:2016	DIN EN ISO 17294-2:2017-01
ISO 17353:2004	DIN EN ISO 17353:2005-11
ISO 17852:2006	DIN EN ISO 17852:2008-04
ISO 17943:2016	DIN EN ISO 17943:2016-10
ISO 17993:2002	DIN EN ISO 17993:2004-03
ISO 18412:2005	DIN EN ISO 18412:2007-02
ISO 18635:2016	DIN EN ISO 18635:2016-10
ISO 18856:2004	DIN EN ISO 18856:2005-11
ISO 18857-1:2005	DIN EN ISO 18857-1:2007-02
ISO 18857-2:2009	DIN EN ISO 18857-2:2012-01
ISO 19458	DIN EN ISO 19458
ISO 23913:2006	DIN EN ISO 23913:2009-09
ISO 28540:2011	DIN ISO 28540:2014-05

Expert assistance and specialized laboratories will be required to perform the analyses described in this standard. Existing safety requirements are to be observed.

Depending on the objective of the analysis, a check shall be made on a case-by-case basis as to whether and to what extent additional conditions will have to be specified.

This standard contains a standard method for the examination of water, waste water and sludge, that has been developed by *DIN-Normenausschuss Wasserwesen* (DIN Standards Committee Water Practice) in collaboration with the *Wasserchemische Gesellschaft* (Water Chemistry Society), a division of the *Gesellschaft Deutscher Chemiker* (German Chemical Society). The standard method is

Preservation and handling of water samples (A 21).

Standard methods published as DIN Standards are obtainable from *Beuth Verlag GmbH*, either individually or grouped in volumes. The standard methods included in the loose-leaf publication entitled *"Deutsche Einheitsverfahren zur Wasser-, Abwasser- und Schlammuntersuchung"* will continue to be published by *Beuth Verlag GmbH* and *Wiley-VCH Verlag GmbH & Co. KGaA*.

Standards or draft standards bearing the group title *"German standard methods for the examination of water, waste water and sludge"* are classified under the following categories (main titles):

General information (group A)

Sensory analysis (group B)

Physical and physicochemical parameters (group C)

Anions (group D)

Cations (group E)

Substance group analysis (group F)

Gaseous constituents (group G)

Parameters characterizing effects and substances (group H)

Microbiological methods (group K)

Test methods using water organisms (group L)

Biological-ecological methods of analysis (group M)

Individual constituents (group P)

Sludge and sediments (group S)

Bio-assays with microorganisms (group T)

Information on parts of these series of standards that have already been published can be obtained from the offices of *DIN-Normenausschuss Wasserwesen*, telephone +49 (30) 2601-2448, or from *Beuth Verlag GmbH*, 10772 Berlin.

Amendments

This standard differs from DIN EN ISO 5667-3:2013-03 as follows:

a) the Bibliography has been updated;

b) the standard has been editorially revised.

Previous editions

DIN EN ISO 5667-3: 1996-04, 2004-05, 2013-03
DIN EN ISO 5667-3 Corrigendum 1: 2006-08

National Annex NA
(informative)

Bibliography

DIN EN ISO 5667 (all parts), *Water quality — Sampling*

DIN EN ISO 5814:2013-02, *Water quality — Determination of dissolved oxygen — Electrochemical probe method (ISO 5814:2012)*

DIN EN ISO 5961:1995-05, *Water quality — Determination of cadmium by atomic absorption spectrometry (ISO 5961:1994)*

DIN EN ISO 6468:1997-02, *Water quality — Determination of certain organochlorine insecticides, polychlorinated biphenyls and chlorobenzenes — Gas-chromatographic method after liquid-liquid extraction (ISO 6468:1996)*

DIN EN ISO 6878:2004-09, *Water quality — Determination of phosphorus — Ammonium molybdate spectrometric method (ISO 6878:2004)*

DIN EN ISO 7027-1:2016-11, *Water quality — Determination of turbidity — Part 1: Quantitative methods (ISO 7027-1:2016)*

DIN EN ISO 7887:2012-04, *Water quality — Examination and determination of colour (ISO 7887:2011)*

DIN EN ISO 7980:2000-07, *Water quality — Determination of calcium and magnesium — Atomic absorption spectrometric method (ISO 7980:1986)*

DIN EN ISO 8467:1995-05, *Water quality — Determination of permanganate index (ISO 8467:1993)*

DIN EN ISO 9377-2:2001-07, *Water quality — Determination of hydrocarbon oil index — Part 2: Method using solvent extraction and gas chromatography (ISO 9377-2:2000)*

DIN EN ISO 9439:2000-10, *Water quality — Evaluation of ultimate aerobic biodegradability of organic compounds in aqueous medium — Carbon dioxide evolution test (ISO 9439:1999)*

DIN EN ISO 9562:2005-02, *Water quality — Determination of adsorbable organically bound halogens (AOX) (ISO 9562:2004)*

DIN EN ISO 9963-1:1996-02, *Water quality — Determination of alkalinity — Part 1: Determination of total and composite alkalinity (ISO 9963-1:1994)*

DIN EN ISO 10304-1:2009-07, *Water quality — Determination of dissolved anions by liquid chromatography of ions — Part 1: Determination of bromide, chloride, fluoride, nitrate, nitrite, phosphate and sulfate (ISO 10304-1:2007)*

DIN EN ISO 10304-3:1997-11, *Water quality — Determination of dissolved anions by liquid chromatography of ions — Part 3: Determination of chromate, iodide, sulfite, thiocyanate and thiosulfate (ISO 10304-3:1997)*

DIN EN ISO 10304-4:1999-07, *Water quality — Determination of dissolved anions by liquid chromatography of ions — Part 4: Determination of chlorate, chloride and chlorite in water with low contamination (ISO 10304-4:1997)*

DIN EN ISO 10523:2012-04, *Water quality — Determination of pH (ISO 10523:2008)*

DIN EN ISO 10695:2000-11, *Water quality — Determination of selected organic nitrogen and phosphorus compounds — Gas chromatographic methods (ISO 10695:2000)*

DIN EN ISO 11074:2015-11, *Soil quality — Vocabulary (ISO 11074:2015)*

DIN EN ISO 11369:1997-11, *Water quality — Determination of selected plant treatment agents — Method using high performance liquid chromatography with UV detection after solid-liquid extraction (ISO 11369:1997)*

DIN EN ISO 11732:2005-05, *Water quality — Determination of ammonium nitrogen — Method by flow analysis (CFA and FIA) and spectrometric detection (ISO 11732:2005)*

DIN EN ISO 11885:2009-09, *Water quality — Determination of selected elements by inductively coupled plasma optical emission spectrometry (ICP-OES) (ISO 11885:2007)*

DIN EN ISO 12010:2019-12, *Water quality — Determination of short-chain polychlorinated alkanes (SCCPs) in water — Method using gas chromatography-mass spectrometry (GC-MS) and negative-ion chemical ionization (NCI) (ISO 12010:2012)*

DIN EN ISO 12020:2000-05, *Water quality — Determination of aluminium — Atomic absorption spectrometric method (ISO 12020:1997)*

DIN EN ISO 12846:2012-08, *Water quality — Determination of mercury — Method using atomic absorption spectrometry (AAS) with and without enrichment (ISO 12846:2012)*

DIN EN ISO 13395:1996-12, *Water quality — Determination of nitrite nitrogen and nitrate nitrogen and the sum of both by flow analysis (CFA and FIA) and spectrometric detection (ISO 13395:1996)*

DIN EN ISO 14402:1999-12, *Water quality — Determination of phenol index by flow analysis (FIA and CFA) (ISO 14402:1999)*

DIN EN ISO 14403-1:2012-10, *Water quality — Determination of total cyanide and free cyanide using flow analysis (FIA and CFA) — Part 1: Method by flow injection analysis (FIA) (ISO 14403-1:2012)*

DIN EN ISO 14403-2:2012-10, *Water quality — Determination of total cyanide and free cyanide using flow analysis (FIA and CFA) — Part 2: Method by continuous flow analysis (CFA) (ISO 14403-2:2012)*

DIN EN ISO 14911:1999-12, *Water quality — Determination of dissolved Li^+, Na^+, NH_4^+, K^+, Mn^{2+}, Ca^{2+}, Mg^{2+}, Sr^{2+} and Ba^{2+} using ion chromatography — Method for water and waste water (ISO 14911:1998)*

DIN EN ISO 15061:2001-12, *Water quality — Determination of dissolved bromate — Method by liquid chromatography of ions (ISO 15061:2001)*

DIN EN ISO 15586:2004-02, *Water quality — Determination of trace elements using atomic absorption spectrometry with graphite furnace (ISO 15586:2003)*

DIN EN ISO 15680:2004-04, *Water quality — Gas-chromatographic determination of a number of monocyclic aromatic hydrocarbons, naphthalene and several chlorinated compounds using purge-and-trap and thermal desorption (ISO 15680:2003)*

DIN EN ISO 15681-1:2005-05, *Water quality — Determination of orthophosphate and total phosphorus contents by flow analysis (FIA and CFA) — Part 1: Method by flow injection analysis (FIA) (ISO 15681-1:2003)*