



SLOVENSKI STANDARD SIST EN ISO 11969:1998

01-januar-1998

Kakovost vode - Določevanje arzena - Atomska absorpcijska spektrometrijska metoda (hidridna tehnika) (ISO 11969:1996)

Water quality - Determination of arsenic - Atomic absorption spectrometric method (hydride technique) (ISO 11969:1996)

Wasserbeschaffenheit - Bestimmung von Arsen - Atomabsorptionsspektrometrie (Hydridverfahren) (ISO 11969:1996)

Qualité de l'eau - Dosage de l'arsenic - Méthode par spectrométrie d'absorption atomique (technique hydrure) (ISO 11969:1996)

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Ta slovenski standard je istoveten z: EN ISO 11969:1996

ICS:

13.060.50	Preiskava vode na kemične snovi	Examination of water for chemical substances
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EUROPEAN STANDARD

EN ISO 11969

NORME EUROPÉENNE

EUROPÄISCHE NORM

July 1996

ICS 13.060.00

Descriptors: See ISO document

English version

**Water quality - Determination of arsenic - Atomic
absorption spectrometric method (hydride
technique) (ISO 11969:1996)**

Qualité de l'eau - Dosage de l'arsenic -
Méthode par spectrométrie d'absorption atomique
(technique hydrure) (ISO 11969:1996)

Wasserbeschaffenheit - Bestimmung von Arsen -
Atomabsorptionsspektrometrie (Hydridverfahren)
(ISO 11969:1996)

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This European Standard was approved by CEN on 1996-06-28. 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, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

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

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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EN ISO 11969:1996

Foreword

The text of the International Standard ISO 11969:1996 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 January 1997, and conflicting national standards shall be withdrawn at the latest by January 1997.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, 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 11969:1996 was approved by CEN as a European Standard without any modification.

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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 of 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 5667-3	1994	Water quality - Sampling - Part 3: Guidance on the preservation and handling of samples	EN/ISO 5667-1	1995

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INTERNATIONAL
STANDARD

ISO
11969

First edition
1996-07-15

**Water quality — Determination of
arsenic — Atomic absorption
spectrometric method (hydride technique)**

iTeh STANDARD PREVIEW

(standards-iteh.ai)
*Qualité de l'eau — Dosage de l'arsenic — Méthode par spectrométrie
d'absorption atomique (technique hydrure)*

[SIST EN ISO 11969:1998](https://standards.iteh.ai/catalog/standards/sist/f233d176-e9f3-41d2-bbef-f46a23c7cfe9/sist-en-iso-11969-1998)

<https://standards.iteh.ai/catalog/standards/sist/f233d176-e9f3-41d2-bbef-f46a23c7cfe9/sist-en-iso-11969-1998>



Reference number
ISO 11969:1996(E)

ISO 11969:1996(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.

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.

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International Standard ISO 11969 was prepared by Technical Committee ISO/TC 147, *Water quality*, Subcommittee SC 2, *Physical, chemical, biochemical methods*.

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

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Water quality — Determination of arsenic — Atomic absorption spectrometric method (hydride technique)

WARNING — Arsenic and arsenic compounds are toxic and are recognized as human carcinogens. Avoid any exposure by inhalation. Personal protection must be used in all cases where exposure to arsenic or arsenic compounds is possible.

1 Scope

This International Standard specifies a method for the determination of arsenic including organically bound arsenic in drinking waters, ground waters and surface waters, in a concentration range from 1 µg/l to 10 µg/l.

Higher concentrations can be determined by using a suitable dilution of the water sample.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO 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 5667-3:1994, *Water quality — Sampling — Part 3: Guidance on the preservation and handling of samples.*

3 Principle

The method is based on the atomic absorption measurement of arsenic generated by the thermal decomposition of arsenic(III) hydride.

Under the conditions of this method, only As(III) is quantitatively converted to the hydride. To avoid errors in determination, other oxidation states need to be converted to As(III) prior to the determination.

As(III) is reduced to gaseous arsenic(III) hydride (AsH₃) by reaction with sodium tetrahydroborate in a hydrochloric acid medium.

The absorbance is determined at a wavelength of 193,7 nm.

4 Reagents

During the analysis, use only reagents of recognized analytical grade.

The arsenic content of the water and the reagents shall be negligible, compared with the lowest concentration to be determined.

4.1 Sulfuric acid (H₂SO₄), $\rho = 1,84$ g/ml.

4.2 Hydrochloric acid (HCl), $\rho = 1,15$ g/ml.

4.3 Hydrogen peroxide (H₂O₂), $w = 30$ % (m/m).

4.4 Sodium hydroxide (NaOH).