

**SLOVENSKI STANDARD
SIST EN ISO 9963-1:1998****01-januar-1998**

Kakovost vode - Določanje alkalitete - 1. del: Določanje celotne in sestavljene alkalitete (hidroksilne in del karbonatne) (ISO 9963-1:1994)

Water quality - Determination of alkalinity - Part 1: Determination of total and composite alkalinity (ISO 9963-1:1994)

Wasserbeschaffenheit - Bestimmung der Alkalinität - Teil 1: Bestimmung der gesamten und der zusammengesetzten Alkalinität (ISO 9963-1:1994)

Qualité de l'eau - Détermination de l'alcalinité - Partie 1: Détermination de l'alcalinité totale et composite (ISO 9963-1:1994)

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SIST EN ISO 9963-1:1998
<https://standards.iteh.ai/catalog/standards/sist/eb54aaca-15a3-49dc-8be7-f506c470d148/sist-en-iso-9963-1-1998>

Ta slovenski standard je istoveten z: EN ISO 9963-1:1995**ICS:**

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

EN ISO 9963-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 1995

ICS 13.060.40

Descriptors: water, quality, water tests, chemical analysis, determination, alkalinity, volumetric analysis

English version

**Water quality - Determination of alkalinity - Part 1:
Determination of total and composite alkalinity
(ISO 9963-1:1994)**

Qualité de l'eau - Détermination de
l'alcalinité - Partie 1: Détermination de
l'alcalinité totale et composite
(ISO 9963-1:1994)

Wasserbeschaffenheit - Bestimmung der
Alkalinität - Teil 1: Bestimmung der gesamten
und der zusammengesetzten Alkalinität
(ISO 9963-1:1994)

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This European Standard was approved by CEN on 1995-10-11. 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

Foreword

The text of the International Standard from ISO/TC 147 "Water quality" of the International Organization for Standardization (ISO) has been taken over as a European Standard by the Technical Committee CEN/TC 230 "Water analysis".

This European Standard consists of the following parts:

EN ISO 9963-1 - Water quality - Determination of alkalinity - Part 1: Determination of total and composite alkalinity

EN ISO 9963-2 - Water quality - Determination of alkalinity - Part 2: Determination of carbonate alkalinity

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 June 1996, and conflicting national standards shall be withdrawn at the latest by June 1996.

According to the CEN/CENELEC Internal Regulations, 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, United Kingdom.

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Endorsement notice

[SIST EN ISO 9963-1:1998](https://standards.iteh.ai/standards/sist-en-iso-9963-1-1998)

The text of the International Standard [ISO 9963-1:1994](https://standards.iteh.ai/standards/sist-en-iso-9963-1-1998) was approved by CEN as a European Standard without any modification.

NOTE: Normative references to International Standard are listed in annex ZA (normative).

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 (including amendments).

<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 on 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

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INTERNATIONAL STANDARD

ISO
9963-1

First edition
1994-11-15

Water quality — Determination of alkalinity —

Part 1:

Determination of total and composite alkalinity
(standards.iteh.ai)

Qualité de l'eau — Détermination de l'alcalinité —

Partie 1: Détermination de l'alcalinité totale et composite
<https://standards.iteh.ai/catalog/standards/sist/b547ae7-15a7-49dc-8be7-f506c470d148/sist-en-iso-9963-1-1998>



Reference number
ISO 9963-1:1994(E)

ISO 9963-1:1994(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.

International Standard ISO 9963-1 was prepared by Technical Committee ISO/TC 147, *Water quality*, Subcommittee SC 2, *Physical, chemical, biochemical methods*.

ISO 9963 consists of the following parts, under the general title *Water quality — Determination of alkalinity*:

- *Part 1: Determination of total and composite alkalinity*
- *Part 2: Determination of carbonate alkalinity*

Annex A of this part of ISO 9963 is for information only.

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Water quality — Determination of alkalinity —

Part 1:

Determination of total and composite alkalinity

1 Scope

This part of ISO 9963 specifies a method for the titrimetric determination of alkalinity. It is intended for the analysis of natural and treated water, and waste water, and can be used directly for waters having an alkalinity concentration of up to 20 mmol/l. For samples containing higher concentrations of alkalinity, a smaller test portion can be used for analysis. The recommended lower limit is 0,4 mmol/l. Suspended matter in the form of carbonate may interfere with the analysis. This interference can be reduced by filtration prior to the titration.

The endpoint detection, using a pH-meter, is less prone to interferences than the use of the indicator.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 9963. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 9963 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 385-1:1984, *Laboratory glassware — Burettes — Part 1: General requirements.*

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.*

ISO 6107-2:1989, *Water quality — Vocabulary — Part 2.*

IEC 746-2:1982, *Expression of performance of electrochemical analyzers — Part 2: pH Value.*

3 Definitions

For the purposes of this part of ISO 9963, the following definitions apply.

3.1 alkalinity (A): The quantitative capacity of aqueous media to react with hydrogen ions. [ISO 6107-2]

3.2 methyl red (methyl orange) endpoint alkalinity: An arbitrary measurement of the total alkalinity (A_T) of water obtained by titration to the methyl red (methyl orange) indicator endpoint (pH 4,5); to assess the equivalent hydrogen carbonate, carbonate and hydroxide concentration of water.

3.3 phenolphthalein endpoint alkalinity; composite alkalinity (A_p): The measurement by titration to the phenolphthalein endpoint (pH 8,3) of that portion of alkalinity arbitrarily attributed to all the hydroxyl and half the carbonate content of a water. [ISO 6107-2]

NOTE 1 The alkalinity of water is primarily a function of the hydrogen carbonate, carbonate and hydroxide concen-