SLOVENSKI STANDARD
SIST EN ISO 9963-2:1998

01-januar-1998

Kakovost vode - Določanje alkalitete - 2. del: Določanje karbonatne alkalitete (ISO 9963-2:1994)

Water quality - Determination of alkalinity - Part 2: Determination of carbonate alkalinity (ISO 9963-2:1994)

Wasserbeschaffenheit - Bestimmung der Alkalinität - Teil 2: Bestimmung der Carbonatalkalinität (ISO 9963-2:19954)

Qualité de l'eau - Détermination de l'alcalinité - Partie 2: Détermination de l'alcalinité carbonate (ISO 9663-2:1994)

Ta slovenski standard je istoveten z: **EN ISO 9963-2:1995**

ICS:

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

SIST EN ISO 9963-2:1998 **en**

EUROPEAN STANDARD

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EUROPÄISCHE NORM

EN ISO 9963-2

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ICS 13.060.40

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English version

Water quality - Determination of alkalinity - Part 2: Determination of carbonate alkalinity (ISO 9963-2:1994)

Qualité de l'eau - Détermination de l'alcalinité - Partie 2: Détermination de l'alcalinité carbonate (ISO 9663-2:1994)

Wasserbeschaffenheit - Bestimmung der Alkalinität - Teil 2: Bestimmung der Carbonatalkalinität (ISO 9963-2:1994)

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 - Determination of total and composite alkalinity
EN ISO 9963-2 - 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.

Endorsement notice

The text of the International Standard ISO 9963-2:1994 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).

Publication	Year	Title	EN	Year
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

INTERNATIONAL STANDARD

ISO 9963-2

First edition
1994-11-15

Water quality — Determination of alkalinity —

Part 2:
Determination of carbonate alkalinity

Qualité de l'eau — Détermination de l'alcalinité —
Partie 2: Détermination de l'alcalinité carbonate

Reference number
ISO 9963-2:1994(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 9963-2 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*

Annexes A and B of this part of ISO 9963 are for information only.

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Water quality — Determination of alkalinity —

Part 2:
Determination of carbonate alkalinity

1 Scope

This part of ISO 9963 specifies a method for the titrimetric determination of carbonate alkalinity in natural and drinking water. Using a higher pH value for the endpoint than the method specified in ISO 9963-1, the influence of other hydrogen acceptors, such as anions of humic acids, is reduced by the procedure.

The method is intended for samples with a carbonate alkalinity between 0,01 mmol/l and 4 mmol/l (as H^+ equivalents). For samples containing higher concentrations of alkalinity, a smaller test portion can be used for analysis.

In this context, carbonate alkalinity is often called total alkalinity and usually has nearly the same numerical value as methyl orange alkalinity (MO-alkalinity).

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 5667-2:1991, *Water quality — Sampling — Part 2: Guidance on sampling techniques.*

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

ISO 9963-1:1994, *Water quality — Determination of alkalinity — Part 1: Determination of total and composite alkalinity.*

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

3 Definition

For the purposes of this part of ISO 9963, the following definition applies.

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

In this method, the endpoint is chosen in such a way as to permit the full neutralization of the carbonate system.

$$A = c(HCO_3^-) + 2c\left(CO_3^{2-}\right) + c(OH^-) + c(X) - c(H^+)$$

Usually proton acceptors (X) other than the carbonate system are present in low concentrations and can often be disregarded. Examples of such buffering sub-