



# SLOVENSKI STANDARD SIST EN ISO 7393-3:2000

01-december-2000

Nadomešča:  
SIST ISO 7393-3:1996

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**Kakovost vode - Določevanje prostega in celotnega klora - 3. del: Jodometrijska titracijska metoda za ugotavljanje celotnega klora (ISO 7393-3:1990)**

Water quality - Determination of free chlorine and total chlorine - Part 3: Iodometric titration method for the determination of total chlorine (ISO 7393-3:1990)

Wasserbeschaffenheit - Bestimmung von freiem Chlor und Gesamtchlor - Teil 3: Iodometrisches Verfahren zur Bestimmung von Gesamtchlor (ISO 7393-3:1990)

Qualité de l'eau - Dosage du chlore libre et du chlore total - Partie 3: Méthode par titrage iodométrique pour le dosage du chlore total (ISO 7393-3:1990)

**Ta slovenski standard je istoveten z: EN ISO 7393-3:2000**

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**ICS:**

13.060.50	Preiskava vode na kemične snovi	Examination of water for chemical substances
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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

EN ISO 7393-3

January 2000

ICS 13.060

English version

Water quality - Determination of free chlorine and total chlorine -  
Part 3: Iodometric titration method for the determination of total  
chlorine (ISO 7393-3:1990)

Qualité de l'eau - Dosage du chlore libre et du chlore total -  
Partie 3: Méthode par titrage iodométrique pour le dosage  
du chlore total (ISO 7393-3:1990)

Wasserbeschaffenheit - Bestimmung von freiem Chlor und  
Gesamtchlor - Teil 3: Iodometrisches Verfahren zur  
Bestimmung von Gesamtchlor (ISO 7393-3:1990)

This European Standard was approved by CEN on 20 January 2000.

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.

This European Standard exists 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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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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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## Foreword

The text of the International Standard from Technical Committee ISO/TC 147 "Water quality" of the International Organization for Standardization (ISO) has been taken over as an European Standard by 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 July 2000, and conflicting national standards shall be withdrawn at the latest by July 2000.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, 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 7393-3:1990 has been approved by CEN as a European Standard without any modification.

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

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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 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**  
**7393-3**

Second edition  
1990-06-01

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## Water quality — Determination of free chlorine and total chlorine —

### Part 3:

Iodometric titration method for the determination of  
total chlorine

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*Qualité de l'eau — Dosage du chlore libre et du chlore total —*

*SIST EN ISO 7393-3:2000*

*Partie 3. Méthode par titrage iodométrique pour le dosage du chlore total*

<https://standards.iteh.ai/catalog/standards/sist/198b6e4c-7b1b-441c-adc0-f8ad51918a05/sist-en-iso-7393-3-2000>



Reference number  
ISO 7393-3 : 1990 (E)

## ISO 7393-3 : 1990 (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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 7393-3 was prepared by Technical Committee ISO/TC 147, *Water quality*.

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This second edition cancels and replaces the first edition (ISO 7393-3 : 1986), of which it constitutes a minor revision. <https://standards.iteh.ai/catalog/standards/sist/f98b6e4c-7bfb-441c-adc0-f8ad51918a05/sist-en-iso-7393-3-2000>

ISO 7393 consists of the following parts, under the general title *Water quality — Determination of free chlorine and total chlorine*:

- *Part 1: Titrimetric method using N,N-diethyl-1,4-phenylenediamine*
- *Part 2: Colorimetric method using N,N-diethyl-1,4-phenylenediamine for routine control purposes*
- *Part 3: Iodometric titration method for the determination of total chlorine*

Annex A forms an integral part of this part of ISO 7393. Annexes B and C are for information only.

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# Water quality — Determination of free chlorine and total chlorine —

## Part 3:

## Iodometric titration method for the determination of total chlorine

### 1 Scope

This part of ISO 7393 specifies an iodometric titration method for the determination of total chlorine in water.

The method is applicable for the measurement of concentrations in terms of chlorine ( $\text{Cl}_2$ ), from 0,01 mmol/l to 0,21 mmol/l (0,71 mg/l to 15 mg/l).

Several substances interfere in the determination (see clause 10).

In annex B a method for direct titration is specified. This is usually applied to the determination of chlorine concentrations above 7  $\mu\text{mol/l}$  (0,5 mg/l) in treated drinking water.

### 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 7393. 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 7393 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 : 1982, *Water quality — Sampling — Part 2: Guidance on sampling techniques.*

### 3 Definitions (see table 1)

For the purposes of this part of ISO 7393, the following definitions apply.

**3.1 free chlorine:** Chlorine present in the form of hypochlorous acid, hypochlorite ion or dissolved elemental chlorine.

**3.2 combined chlorine:** The fraction of total chlorine present in the form of chloramines and organic chloramines.

**3.3 total chlorine:** Chlorine present in the form of "free chlorine" or "combined chlorine" or both.

**3.4 chloramines:** Derivatives of ammonia by substitution of one, two or three hydrogen atoms with chlorine atoms (monochloramine  $\text{NH}_2\text{Cl}$ , dichloramine  $\text{NHCl}_2$ , and nitrogen trichloride  $\text{NCl}_3$ ) and all chlorinated derivatives of organic nitrogen compounds.

Table 1 — Terms and synonyms in relation to actual compounds in the solution

Term	Synonym	Compounds
Free chlorine	Free chlorine	Active free chlorine Elemental chlorine, hypochlorous acid
	Potential free chlorine	Hypochlorite
Total chlorine	Total residual chlorine	Elemental chlorine, hypochlorous acid, hypochlorite, chloramines

### 4 Principle

Reaction in acid solution of total chlorine and potassium iodide with liberation of free iodine. Instantaneous reduction of the iodine by a known excess of thiosulfate standard solution previously added to the solution. Titration of the unreacted thiosulfate with potassium iodate standard reference solution.

### 5 Reagents

During the analysis, use only reagents of recognized analytical grade, and water as specified in 5.1.