



**SLOVENSKI STANDARD**  
**SIST EN ISO 15587-1:2003**  
**01-maj-2003**

Water quality - Digestion for the determination of selected elements in water - Part 1: Aqua regia digestion (ISO 15587-1:2002)

Water quality - Digestion for the determination of selected elements in water - Part 1: Aqua regia digestion (ISO 15587-1:2002)

Wasserbeschaffenheit - Aufschluss für die Bestimmung ausgewählter Elemente in Wasser - Teil 1: Königswasser-Aufschluss (ISO 15587-1:2002)

Qualité de l'eau - Digestion pour la détermination de certains éléments dans l'eau - Partie 1: Digestion à l'eau régale (ISO 15587-1:2002)

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**Ta slovenski standard je istoveten z: EN ISO 15587-1:2002**

**ICS:**

13.060.50      Examination of water for chemical substances

**SIST EN ISO 15587-1:2003**      **en**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN ISO 15587-1**

March 2002

ICS 13.060.50

English version

**Water quality - Digestion for the determination of selected  
elements in water - Part 1: Aqua regia digestion (ISO 15587-  
1:2002)**

Qualité de l'eau - Digestion pour la détermination de  
certains éléments dans l'eau - Partie 1: Digestion à l'eau  
régale (ISO 15587-1:2002)

Wasserbeschaffenheit - Aufschluss für die Bestimmung  
ausgewählter Elemente in Wasser - Teil 1: Königswasser-  
Aufschluss (ISO 15587-1:2002)

This European Standard was approved by CEN on 1 March 2002.

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 Management Centre 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 Management Centre 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, Malta, 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

**Management Centre: rue de Stassart, 36 B-1050 Brussels**

EN ISO 15587-1:2002 (E)

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## Foreword

This document (ISO 15587-1:2002) 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 September 2002, and conflicting national standards shall be withdrawn at the latest by September 2002.

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, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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### Endorsement notice

[SIST EN ISO 15587-1:2003](https://standards.iteh.ai/catalog/standards/sist/en-iso-15587-1-2003)

The text of the International Standard ISO 15587-1:2002 has been approved by CEN as a European Standard without any modifications.

NOTE Normative references to International Standards 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).

NOTE Where an International Publication has been modified by common modifications, indicated by (mod.), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
ISO 3696	1987	Water for analytical laboratory use — Specifications and test methods	EN ISO 3696	1995
ISO 5667-3	1994	Water quality – Sampling – Part 3: Guidance on the preservation and handling of samples	EN ISO 5667-3	1995

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# INTERNATIONAL STANDARD

# ISO 15587-1

First edition  
2002-03-01

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## Water quality — Digestion for the determination of selected elements in water —

### Part 1: ***Aqua regia*** digestion

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*Qualité de l'eau — Digestion pour la détermination de certains éléments  
dans l'eau —*

*Partie 1: Digestion à l'eau régale*

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## ISO 15587-1:2002(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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

The main task of technical committees is to prepare International Standards. 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.

Attention is drawn to the possibility that some of the elements of this part of ISO 15587 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 15587-1 was prepared by Technical Committee ISO/TC 147, *Water quality*, Subcommittee SC 2, *Physical, chemical and biochemical method*.

ISO 15587 consists of the following parts, under the general title *Water quality — Digestion for the determination of selected elements in water*:

— *Part 1: Aqua regia digestion*

— *Part 2: Nitric acid digestion*

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Annexes A to E of this part of ISO 15587 are for information only.

# Water quality — Digestion for the determination of selected elements in water —

## Part 1: *Aqua regia* digestion

**WARNING** — Persons using this part of ISO 15587 should be familiar with normal laboratory practice. This part of ISO 15587 does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and to ensure compliance with any national regulatory conditions.

### 1 Scope

This part of ISO 15587 specifies a method for extracting trace elements from a water sample using *aqua regia* as a digestion agent. The method is applicable to all types of waters with a suspended solids mass concentration of less than 20 g/l and a mass concentration of total organic carbon (TOC) expressed as carbon of less than 5 g/l.

The *aqua regia* digestion method is empirical and it might not release elements completely. However, for most environmental applications, the result is fit for purpose.

*Aqua regia* digestion is suitable for the release of: Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Hg, K, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Sn, Sr, Ti, V, Zn. It is not suitable for the digestion of refractory compounds such as SiO<sub>2</sub>, TiO<sub>2</sub> and Al<sub>2</sub>O<sub>3</sub>. The presence of chloride in the digestion solution may limit the application of analytical techniques.

The method is generic and may be implemented using a wide variety of equipment provided

- the digestion composition is unchanged,
- the digestion temperature is known, and
- the digestion duration is in accordance with this temperature.

### 2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO 15587. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 15587 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 3696:1987, *Water for analytical laboratory use — Specification and test methods*

ISO 5667-3:1994, *Water quality — Sampling — Part 3: Guidance on the preservation and handling of samples*