



**SLOVENSKI STANDARD**  
**SIST EN ISO 4142:2002**

**01-november-2002**

**BUXca Yý U**  
**SIST ISO 4142:1998**

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**Laboratorijska steklovina - Epruvete (ISO 4142:2002)**

Laboratory glassware - Test tubes (ISO 4142:2002)

Laborgeräte aus Glas - Reagenzgläser (ISO 4142:2002)

Verrerie de laboratoire - Tubes à essais (ISO 4142:2002)

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**ICS:**

71.040.20	Laboratorijska posoda in aparati	Laboratory ware and related apparatus
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**en**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN ISO 4142**

August 2002

ICS 71.040.20

English version

## Laboratory glassware - Test tubes (ISO 4142:2002)

Verrerie de laboratoire - Tubes à essais (ISO 4142:2002)

Laborgeräte aus Glas - Reagenzgläser (ISO 4142:2002)

This European Standard was approved by CEN on 10 July 2002.

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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.

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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 4142:2002 (E)

<b>CORRECTED 2002-10-02</b>
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## Foreword

This document (EN ISO 4142:2002) has been prepared by Technical Committee ISO /TC 48 "Laboratory glassware and related apparatus" in collaboration with Technical Committee CEN/TC 332 "Laboratory equipment", 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of an identical text or by endorsement, at the latest by February 2003, and conflicting national standards shall be withdrawn at the latest by February 2003.

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.

### Endorsement notice

The text of ISO 4142:2002 has been approved by CEN as EN ISO 4142:2002 without any modifications.

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# INTERNATIONAL STANDARD

**ISO  
4142**

Second edition  
2002-08-15

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## Laboratory glassware — Test tubes

*Verrerie de laboratoire — Tubes à essais*

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## 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.

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 International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 4142 was prepared by Technical Committee ISO/TC 48, *Laboratory glassware and related apparatus*, Subcommittee SC 2, *General laboratory glassware (other than measuring apparatus)*.

This second edition cancels and replaces the first edition (ISO 4142:1997) by incorporating the following changes:

- a) culture tubes have been deleted;
- b) the material has been more precisely specified;
- c) three types of test tubes have been introduced;
- d) additional series and nominal sizes have been added.

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# Laboratory glassware — Test tubes

## 1 Scope

This International Standard specifies a range of test tubes, suitable for general laboratory use, fabricated from borosilicate, neutral or soda/lime glass, which are designated Type I, Type II and Type III respectively.

## 2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard 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 695, *Glass — Resistance to attack by a boiling aqueous solution of mixed alkali — Method of test and classification*

ISO 719, *Glass — Hydrolytic resistance of glass grains at 98 °C — Method of test and classification*

ISO 1776:1985, *Glass — Resistance to attack by hydrochloric acid at 100 °C — Flame emission or flame atomic absorption spectrometric method*

ISO 3585, *Borosilicate glass 3.3 — Properties*

ISO 4803, *Laboratory glassware — Borosilicate glass tubing*

## 3 Classification and designation

The following three types of test tubes are specified.

- Type I test tubes (borosilicate glass) are suitable for most usual laboratory applications. They will stand most temperatures commonly used, including boiling of samples. These test tubes are highly chemically resistant.
- Type II test tubes (neutral glass) are suitable for many less demanding applications, and will withstand moderate warming, e. g. in a water bath, and/or moderate temperature change. They should not be taken from the cold and placed directly into the hottest part of the flame without being preheated. Type II test tubes are chemically resistant and are suitable for use with samples which are susceptible to pH changes.
- Type III test tubes (soda/lime glass) are suitable for general mixing and simple laboratory work, and will withstand moderate warming, e. g. in a water bath, and/or moderate temperature change. They should not be placed into naked flames. Their chemical resistance is limited.

These type numbers are specific to this International Standard and should not be confused with similar numbering used in the hydrolytic resistance classification.

If a designation of test tubes is required, this shall be by reference to this International Standard ISO 4142, together with the type designation, the nominal size and the wall thickness of the test tube.