



# SLOVENSKI STANDARD SIST EN ISO 16496:2016

01-april-2016

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**Laboratorijska steklovina - Posode z vakuumskim plaščem za toplotno izolacijo  
(ISO 16496:2016)**

Laboratory glassware - Vacuum-jacketed vessels for heat insulation (ISO 16496:2016)

Laborgeräte aus Glas - Geräte mit Vakuummantelisolierung (ISO 16496:2016)

Verrerie de laboratoire - Appareillage à double enveloppe isolant sous vide (ISO  
16496:2016)

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Ta slovenski standard je istoveten z: **EN ISO 16496:2016**

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**ICS:**

71.040.20	Laboratorijska posoda in aparati	Laboratory ware and related apparatus
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EUROPEAN STANDARD

EN ISO 16496

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 2016

ICS 71.040.20

English Version

## Laboratory glassware - Vacuum-jacketed vessels for heat insulation (ISO 16496:2016)

Verrerie de laboratoire - Récipients à double enveloppe à vide pour isolation thermique (ISO 16496:2016)

Laborgeräte aus Glas - Geräte mit Vakuummantelisolierung (ISO 16496:2016)

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**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

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## European foreword

This document (EN ISO 16496:2016) has been prepared by Technical Committee ISO/TC 48 "Laboratory equipment" 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of an identical text or by endorsement, at the latest by August 2016, and conflicting national standards shall be withdrawn at the latest by August 2016.

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**Laboratory glassware — Vacuum-  
jacketed vessels for heat insulation**

*Verrerie de laboratoire — Récipients à double enveloppe à vide pour  
isolation thermique*

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 48, *Laboratory equipment*.

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# Laboratory glassware — Vacuum-jacketed vessels for heat insulation

## 1 Scope

This International Standard recommends dimensions and specifies requirements and test methods for laboratory glassware manufactured from borosilicate glass 3.3 and provided with a vacuum jacket for thermal insulation. It covers Dewar vessels, vacuum-jacketed reaction vessels and vacuum-jacketed columns intended for laboratory use and laboratory related applications. Typical dimensions are given in [Tables 1](#) to [5](#).

This International Standard does not apply to large scale production equipment and equipment operated with pressures of more than 0,1 bar above atmospheric pressure.

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 383, *Laboratory glassware — Interchangeable conical ground joints*

ISO 641, *Laboratory glassware — Interchangeable spherical ground joints*

ISO 718, *Laboratory glassware — Thermal shock and thermal shock endurance — Test methods*

ISO 3585, *Borosilicate glass 3.3 — Properties*

ISO 4803, *Laboratory glassware — Borosilicate glass tubing*

ISO 4790, *Glass-to-glass sealings — Determination of stresses*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

### 3.1

#### **Dewar flask**

glass vessel with vacuum jacket for thermal insulation, designed for keeping substances at a controlled temperature within a range from -200 °C to +200 °C

Note 1 to entry: See [8.1](#) for restrictions on the use of Dewar flasks.

### 3.2

#### **cryo vessel**

vacuum jacketed vessel made of materials other than glass

### 3.3

#### **column**

cylindrical vessel for the thermal separation of substances in a laboratory or pilot plant