

**SLOVENSKI STANDARD
SIST EN ISO 8655-6:2022****01-julij-2022****Nadomešča:****SIST EN ISO 8655-6:2002****SIST EN ISO 8655-6:2002/AC:2009**

Volumetrične naprave, delujoče na bat - 6. del: Gravimetrični referenčni postopek merjenja za določanje prostornine (ISO 8655-6:2022)

Piston-operated volumetric apparatus - Part 6: Gravimetric reference measurement procedure for the determination of volume (ISO 8655-6:2022)

Volumenmessgeräte mit Hubkolben - Teil 6: Gravimetrisches Referenzprüfverfahren zur Bestimmung des Volumens (ISO 8655-6:2022)

Appareils volumétriques à piston - Partie 6: Mode opératoire de mesure gravimétrique de référence pour la détermination de volumes (ISO 8655-6:2022)

<https://standards.iteh.ai/catalog/standards/sist/004284ae-57b0-41ea-9322-eea36637c3b5/sist-en-iso-8655-6-2022>

Ta slovenski standard je istoveten z: EN ISO 8655-6:2022**ICS:**

17.060	Merjenje prostornine, mase, gostote, viskoznosti	Measurement of volume, mass, density, viscosity
71.040.20	Laboratorijska posoda in aparati	Laboratory ware and related apparatus

SIST EN ISO 8655-6:2022**en,fr,de**

**iTeh STANDARD
PREVIEW
(standards.iteh.ai)**

[SIST EN ISO 8655-6:2022](https://standards.iteh.ai/catalog/standards/sist/004284ae-57b0-41ea-9322-eaa36637c3b5/sist-en-iso-8655-6-2022)

<https://standards.iteh.ai/catalog/standards/sist/004284ae-57b0-41ea-9322-eaa36637c3b5/sist-en-iso-8655-6-2022>

EUROPEAN STANDARD

EN ISO 8655-6

NORME EUROPÉENNE

EUROPÄISCHE NORM

May 2022

ICS 17.060

Supersedes EN ISO 8655-6:2002, EN ISO 8655-6:2002/AC:2009

English Version

Piston-operated volumetric apparatus - Part 6: Gravimetric reference measurement procedure for the determination of volume (ISO 8655-6:2022)

Appareils volumétriques à piston - Partie 6: Mode opératoire de mesure gravimétrique de référence pour la détermination de volumes (ISO 8655-6:2022)

Volumenmessgeräte mit Hubkolben - Teil 6: Gravimetrisches Referenzprüfverfahren zur Bestimmung des Volumens (ISO 8655-6:2022)

This European Standard was approved by CEN on 13 February 2022.

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 CEN-CENELEC 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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Contents	Page
European foreword.....	3

**iTeh STANDARD
PREVIEW
(standards.iteh.ai)**

[SIST EN ISO 8655-6:2022](https://standards.iteh.ai/catalog/standards/sist/004284ae-57b0-41ea-9322-eea36637c3b5/sist-en-iso-8655-6-2022)

<https://standards.iteh.ai/catalog/standards/sist/004284ae-57b0-41ea-9322-eea36637c3b5/sist-en-iso-8655-6-2022>

European foreword

This document (EN ISO 8655-6:2022) 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 November 2022, and conflicting national standards shall be withdrawn at the latest by November 2022.

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

This document supersedes EN ISO 8655-6:2002, EN ISO 8655-6:2002/AC:2009.

Any feedback and questions on this document should be directed to the users' national standards body/national committee. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

(standards.iteh.ai)
Endorsement notice

The text of ISO 8655-6:2022 has been approved by CEN as EN ISO 8655-6:2022 without any modification.

SIST EN ISO 8655-6:2022
<https://standards.iteh.ai/catalog/standards/sist/004284ae-57b0-41ea-9322-eea36637c3b5/sist-en-iso-8655-6-2022>

**iTeh STANDARD
PREVIEW
(standards.iteh.ai)**

[SIST EN ISO 8655-6:2022](https://standards.iteh.ai/catalog/standards/sist/004284ae-57b0-41ea-9322-eaa36637c3b5/sist-en-iso-8655-6-2022)

<https://standards.iteh.ai/catalog/standards/sist/004284ae-57b0-41ea-9322-eaa36637c3b5/sist-en-iso-8655-6-2022>

INTERNATIONAL
STANDARD

ISO
8655-6

Second edition
2022-04

**Piston-operated volumetric
apparatus —**

Part 6:
**Gravimetric reference measurement
procedure for the determination of
volume**

Appareils volumétriques à piston —

*Partie 6: Mode opératoire de mesure gravimétrique de référence pour
la détermination de volumes*

[SIST EN ISO 8655-6:2022](https://standards.iteh.ai/catalog/standards/sist/004284ae-57b0-41ea-9322-eea36637c3b5/sist-en-iso-8655-6-2022)

<https://standards.iteh.ai/catalog/standards/sist/004284ae-57b0-41ea-9322-eea36637c3b5/sist-en-iso-8655-6-2022>



Reference number
ISO 8655-6:2022(E)

© ISO 2022

**iTeh STANDARD
PREVIEW
(standards.iteh.ai)**

[SIST EN ISO 8655-6:2022](https://standards.iteh.ai/catalog/standards/sist/004284ae-57b0-41ea-9322-eea36637c3b5/sist-en-iso-8655-6-2022)

<https://standards.iteh.ai/catalog/standards/sist/004284ae-57b0-41ea-9322-eea36637c3b5/sist-en-iso-8655-6-2022>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2022

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

	Page
Foreword.....	v
Introduction.....	vi
1 Scope.....	1
2 Normative references.....	1
3 Terms and definitions.....	1
4 General requirements.....	2
5 Test equipment.....	2
5.1 General.....	2
5.2 Balance.....	2
5.3 Liquid reservoir.....	3
5.4 Weighing vessel.....	3
5.5 Measuring devices.....	3
6 Test liquid.....	3
7 Test conditions.....	3
7.1 General.....	3
7.2 Test room.....	3
7.3 Evaporation.....	4
7.4 Test cycle time.....	4
8 Procedure.....	4
8.1 General.....	4
8.1.1 Test volume.....	4
8.1.2 Number of measurements.....	4
8.1.3 Weighing procedure.....	4
8.1.4 Test conditions during weighing procedure.....	5
8.1.5 Dispensing of samples.....	5
8.2 Preparation.....	5
8.3 Single-channel air displacement pipettes (in accordance with ISO 8655-2).....	5
8.3.1 General.....	5
8.3.2 Test cycle.....	5
8.4 Multi-channel pipettes (in accordance with ISO 8655-2).....	7
8.5 Positive displacement pipettes (in accordance with ISO 8655-2).....	7
8.6 Burettes (in accordance with ISO 8655-3).....	7
8.7 Dilutors (in accordance with ISO 8655-4).....	8
8.7.1 General.....	8
8.7.2 Test cycle.....	8
8.8 Dispensers (in accordance with ISO 8655-5).....	9
8.9 Syringes (in accordance with ISO 8655-9).....	9
8.9.1 General.....	9
8.9.2 Test cycle.....	9
9 Evaluation.....	10
9.1 Calculation of evaporation loss.....	10
9.2 Calculation of the corrected weighing value of each quantity delivered.....	10
9.3 Conversion of the corrected weighing values to volume.....	10
9.3.1 General.....	10
9.3.2 Calculation of volume using the general formula.....	10
9.3.3 Calculation of volume using the Z correction factor.....	12
9.3.4 Mean delivered volume.....	12
9.4 Systematic error of measurement.....	13
9.5 Random error of measurement.....	13
9.6 Uncertainty of measurement.....	13

ISO 8655-6:2022(E)

10	Reporting of results	14
	Annex A (informative) Calculation of volumes from balance readings	15
	Bibliography	16

**iTeh STANDARD
PREVIEW
(standards.iteh.ai)**

[SIST EN ISO 8655-6:2022](https://standards.iteh.ai/catalog/standards/sist/004284ae-57b0-41ea-9322-eaa36637c3b5/sist-en-iso-8655-6-2022)

<https://standards.iteh.ai/catalog/standards/sist/004284ae-57b0-41ea-9322-eaa36637c3b5/sist-en-iso-8655-6-2022>

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).

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).

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

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 48, *Laboratory equipment*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 332, *Laboratory equipment*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 8655-6:2002), which has been technically revised. It also incorporates the Technical Corrigendum ISO 8655-6:2002/Cor.1:2008, which has been technically revised.

The main changes are as follows:

- expanded uncertainty of the test equipment in [Table 1](#) and [2](#) has been revised in conjunction with ISO/TR 20461;
- Annex B has been deleted;
- new [Clause 4](#) “General requirements” has been added;
- [Formula \(2\)](#) has been added based on ISO 4787^[13].

A list of all parts in the ISO 8655 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.