



SLOVENSKI STANDARD SIST EN ISO 6145-9:2011

01-marec-2011

Analiza plinov - Priprava kalibracijskih plinskih zmesi z uporabo dinamičnih volumetričnih metod - 9. del: Metoda nasičenja (ISO 6145-9:2009)

Gas analysis - Preparation of calibration gas mixtures using dynamic volumetric methods - Part 9: Saturation method (ISO 6145-9:2009)

Gasanalyse - Herstellung von Kalibriergasgemischen mit Hilfe von dynamisch-volumetrischen Verfahren - Teil 9: Sättigungsverfahren (ISO 6145-9:2009)

Analyse des gaz - Préparation des mélanges de gaz pour étalonnage à l'aide de méthodes volumétriques dynamiques - Partie 9: Méthode par saturation (ISO 6145-9:2009)

<https://standards.iteh.ai/catalog/standards/sist/1e19e120-225d-4924-a81f-c684f2e6a284/sist-en-iso-6145-9-2011>

Ta slovenski standard je istoveten z: EN ISO 6145-9:2010

ICS:

71.040.40 Kemijska analiza Chemical analysis

SIST EN ISO 6145-9:2011 en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN ISO 6145-9:2011](https://standards.iteh.ai/catalog/standards/sist/1e19e120-225d-4924-a81f-c684f2e6a284/sist-en-iso-6145-9-2011)

<https://standards.iteh.ai/catalog/standards/sist/1e19e120-225d-4924-a81f-c684f2e6a284/sist-en-iso-6145-9-2011>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 6145-9

December 2010

ICS 71.040.40

English Version

**Gas analysis - Preparation of calibration gas mixtures using
dynamic volumetric methods - Part 9: Saturation method (ISO
6145-9:2009)**

Analyse des gaz - Préparation des mélanges de gaz pour
étalonnage à l'aide de méthodes volumétriques
dynamiques - Partie 9: Méthode par saturation (ISO 6145-
9:2009)

Gasanalyse - Herstellung von Kalibriergasgemischen mit
Hilfe von dynamisch-volumetrischen Verfahren - Teil 9:
Sättigungsverfahren (ISO 6145-9:2009)

This European Standard was approved by CEN on 11 December 2010.

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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

Foreword.....3

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN ISO 6145-9:2011](https://standards.iteh.ai/catalog/standards/sist/1e19e120-225d-4924-a81f-c684f2e6a284/sist-en-iso-6145-9-2011)

<https://standards.iteh.ai/catalog/standards/sist/1e19e120-225d-4924-a81f-c684f2e6a284/sist-en-iso-6145-9-2011>

Foreword

The text of ISO 6145-9:2009 has been prepared by Technical Committee ISO/TC 158 "Analysis of gases" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 6145-9:2010.

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 June 2011, and conflicting national standards shall be withdrawn at the latest by June 2011.

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

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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of ISO 6145-9:2009 has been approved by CEN as a EN ISO 6145-9:2010 without any modification.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN ISO 6145-9:2011](https://standards.iteh.ai/catalog/standards/sist/1e19e120-225d-4924-a81f-c684f2e6a284/sist-en-iso-6145-9-2011)

<https://standards.iteh.ai/catalog/standards/sist/1e19e120-225d-4924-a81f-c684f2e6a284/sist-en-iso-6145-9-2011>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN ISO 6145-9:2011](#)

<https://standards.iteh.ai/catalog/standards/sist/1e19e120-225d-4924-a81f-c684f2e6a284/sist-en-iso-6145-9-2011>

INTERNATIONAL STANDARD

ISO
6145-9

Second edition
2009-10-01

Gas analysis — Preparation of calibration gas mixtures using dynamic volumetric methods —

Part 9: Saturation method

*Analyse des gaz — Préparation des mélanges de gaz pour étalonnage
à l'aide de méthodes volumétriques dynamiques —
Partie 9. Méthode par saturation*

[SIST EN ISO 6145-9:2011](https://standards.iteh.ai/catalog/standards/sist/1e19e120-225d-4924-a81f-c684f2e6a284/sist-en-iso-6145-9-2011)

<https://standards.iteh.ai/catalog/standards/sist/1e19e120-225d-4924-a81f-c684f2e6a284/sist-en-iso-6145-9-2011>



Reference number
ISO 6145-9:2009(E)

© ISO 2009

ISO 6145-9:2009(E)**PDF disclaimer**

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN ISO 6145-9:2011](https://standards.iteh.ai/catalog/standards/sist/1e19e120-225d-4924-a81f-c684f2e6a284/sist-en-iso-6145-9-2011)

<https://standards.iteh.ai/catalog/standards/sist/1e19e120-225d-4924-a81f-c684f2e6a284/sist-en-iso-6145-9-2011>

**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2009

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Principle	1
5 Equipment	2
5.1 Set up.....	2
5.2 Gas preparation	2
5.3 Compatibility of the apparatus.....	2
5.4 Selection of the apparatus.....	2
5.5 Pressure measurement.....	2
5.6 Temperature control.....	3
5.7 Instrumentation	3
5.8 Purity.....	4
6 Procedure	4
6.1 Installation.....	4
6.2 Operation of a direct system	4
6.3 Operation of a closed circulation system.....	4
7 Uncertainty of measurement	5
Annex A (normative) Overview of vapour pressure data for various substances	7
Annex B (informative) Examples of uncertainty estimations	11
Bibliography	14

ISO 6145-9:2009(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 2.

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

ISO 6145-9 was prepared by Technical Committee ISO/TC 158, *Analysis of gases*.

This second edition cancels and replaces the first edition (ISO 6145-9:2001) and ISO 6145-9:2001/Cor 1:2002, which have been technically revised. As Annex B is purely informative, and included as a guide to the methods of calculation of the volume fractions, the numerical examples which are presented in it have been carried forward verbatim from ISO 6145-9:2001 to this updated standard. Although some references have been updated in the present bibliography to the most recent editions, the tables in Annex A have also been reproduced verbatim and are based on data from the earlier editions of the relevant publications (References [3], [4] and [7] to [10] in the Bibliography). In the application of this updated standard, it is firmly recommended that the more recent versions of the publications be consulted, even though it is anticipated that any amendments to the earlier versions will be minor ones. For example, the 15th edition of Reference [4] was published in 1999 and the 2nd edition of Reference [8] was published in 1984.

ISO 6145-9 also cancels and replaces ISO 6147, which has the same subject. In comparison with ISO 6147, ISO 6145-9 gives more detailed information on the use of the apparatus and a clause on the uncertainty of measurement has been added. The estimated uncertainties in the calibration methods and techniques have now been combined in a square-root sum-of-squares manner to form the relative combined standard uncertainty.

ISO 6145 consists of the following parts, under the general title *Gas analysis — Preparation of calibration gas mixtures using dynamic volumetric methods*:

- *Part 1: Methods of calibration*
- *Part 2: Volumetric pumps*
- *Part 4: Continuous syringe injection method*
- *Part 5: Capillary calibration devices*
- *Part 6: Critical orifices*
- *Part 7: Thermal mass-flow controllers*
- *Part 8: Diffusion method*

- *Part 9: Saturation method*
- *Part 10: Permeation method*
- *Part 11: Electrochemical generation*

ISO 6145-3, entitled *Periodic injections into a flowing gas stream*, has been withdrawn.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN ISO 6145-9:2011](https://standards.iteh.ai/catalog/standards/sist/1e19e120-225d-4924-a81f-c684f2e6a284/sist-en-iso-6145-9-2011)

<https://standards.iteh.ai/catalog/standards/sist/1e19e120-225d-4924-a81f-c684f2e6a284/sist-en-iso-6145-9-2011>