SLOVENSKI STANDARD
SIST EN ISO 10723:2013

01-februar-2013

Nadomešča:
SIST EN ISO 10723:2002
SIST EN ISO 10723:2002/AC:2004

Zemeljski plin - Vrednotenje zmogljivosti analitskih sistemov (ISO 10723:2012)

Natural gas - Performance evaluation for analytical systems (ISO 10723:2012)

Erdgas - Bewertung der Leistungsfähigkeit von Analysensystemen (ISO 10723:2012)

Gaz naturel - Évaluation des performances des systèmes d'analyse (ISO 10723:2012)

Ta slovenski standard je istoveten z: **EN ISO 10723:2012**

ICS:

75.060	Zemeljski plin	Natural gas

SIST EN ISO 10723:2013 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 10723

December 2012

ICS 75.060

Supersedes EN ISO 10723:2002

English Version

Natural gas - Performance evaluation for analytical systems (ISO 10723:2012)

Gaz naturel - Évaluation des performances des systèmes d'analyse (ISO 10723:2012)

Erdgas - Bewertung der Leistungsfähigkeit von Analysensystemen (ISO 10723:2012)

This European Standard was approved by CEN on 30 November 2012.

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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

Foreword

This document (EN ISO 10723:2012) has been prepared by Technical Committee ISO/TC 193 "Natural gas".

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of an identical text or by endorsement, at the latest by June 2013, and conflicting national standards shall be withdrawn at the latest by June 2013.

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The text of ISO 10723:2012 has been approved by CEN as a EN ISO 10723:2012 without any modification.

INTERNATIONAL STANDARD

ISO 10723

Second edition
2012-12-01

Natural gas — Performance evaluation for analytical systems

Gaz naturel — Évaluation des performances des systèmes d'analyse

Reference number
ISO 10723:2012(E)

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

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.

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ISO 10723 was prepared by Technical Committee ISO/TC 193, *Natural gas*, Subcommittee SC 1, *Analysis of natural gas*.

This second edition cancels and replaces the first edition (ISO 10723:1995), which has been technically revised. It also incorporates Technical Corrigendum ISO 10723:1995/Cor.1:1998.

Introduction

This International Standard describes a method for evaluating the performance of analytical systems intended for the analysis of natural gas. Natural gas is assumed to consist predominantly of methane, with other saturated hydrocarbons and non-combustible gases.

Performance evaluation makes no assumption about equipment for and/or methodology of analysis but gives test methods which can be applied to the chosen analytical system, including the method, equipment and sample handling.

This International Standard contains an informative annex (Annex A) that shows the application for an on-line gas chromatographic system which, as described, is assumed to have a response/concentration relationship for all components that is represented by a straight line through the origin. This International Standard contains an additional informative annex (Annex B) that gives a rationale for the approach used for instrument benchmarking.

Natural gas — Performance evaluation for analytical systems

1 Scope

1.1 This International Standard specifies a method of determining whether an analytical system for natural gas analysis is fit for purpose. It can be used either

a) to determine a range of gas compositions to which the method can be applied, using a specified calibration gas, while satisfying previously defined criteria for the maximum errors and uncertainties on the composition or property or both, or

b) to evaluate the range of errors and uncertainties on the composition or property (calculable from composition) or both when analysing gases within a defined range of composition, using a specified calibration gas.

1.2 It is assumed that

a) for evaluations of the first type above, the analytical requirement has been clearly and unambiguously defined, in terms of the range of acceptable uncertainty on the composition, and, where appropriate, the uncertainty in physical properties calculated from these measurements,

b) for applications of the second type above, the analytical requirement has been clearly and unambiguously defined, in terms of the range of composition to be measured and, where appropriate, the range of properties which may be calculated from these measurements,

c) the analytical and calibration procedures have been fully described, and

d) the analytical system is intended to be applied to gases having compositions which vary over ranges normally found in gas transmission and distribution systems.

1.3 If the performance evaluation shows the system to be unsatisfactory in terms of the uncertainty on the component amount fraction or property, or shows limitations in the ranges of composition or property values measurable within the required uncertainty, then it is intended that the operating parameters, including

a) the analytical requirement,

b) the analytical procedure,

c) the choice of equipment,

d) the choice of calibration gas mixture, and

e) the calculation procedure,

be reviewed to assess where improvements can be obtained. Of these parameters, the choice of the calibration gas composition is likely to have the most significant influence.

1.4 This International Standard is applicable to analytical systems which measure individual component amount fractions. For an application such as calorific value determination, the method will be typically gas chromatography, set up, as a minimum, for the measurement of nitrogen, carbon dioxide, individual hydrocarbons from C_1 to C_5 and a composite measurement representing all higher hydrocarbons of carbon number 6 and above. This allows for the calculation of calorific value and similar properties with acceptable accuracy. In addition, components such as H_2S can be measured individually by specific measurement methods to which this evaluation approach can also be applied.