SLOVENSKI STANDARD
SIST EN ISO 6974-2:2012

01-julij-2012

Nadomešča:
SIST EN ISO 6974-2:2002

Zemeljski plin - Določevanje sestave in pripadajoče negotovosti s plinsko kromatografijo - 2. del: Računanje negotovosti (ISO 6974-2:2012)

Natural gas - Determination of composition and associated uncertainty by gas chromatography - Part 2: Uncertainty calculations (ISO 6974-2:2012)

Erdgas - Bestimmung der Zusammensetzung und der zugehörigen Unsicherheit durch Gaschromatographie - Teil 2: Unsicherheitsberechnungen (ISO 6974-2:2012)

Gaz naturel - Détermination de la composition avec une incertitude définie par chromatographie en phase gazeuse - Partie 2: Calculs d'incertitude (ISO 6974-2:2012)

Ta slovenski standard je istoveten z: **EN ISO 6974-2:2012**

ICS:

75.060	Zemeljski plin	Natural gas

SIST EN ISO 6974-2:2012 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 6974-2

May 2012

ICS 75.060

Supersedes EN ISO 6974-2:2002

English Version

Natural gas - Determination of composition and associated uncertainty by gas chromatography - Part 2: Uncertainty calculations (ISO 6974-2:2012)

Gaz naturel - Détermination de la composition et de l'incertitude associée par chromatographie en phase gazeuse - Partie 2: Calculs d'incertitude (ISO 6974-2:2012)

Erdgas - Bestimmung der Zusammensetzung und der zugehörigen Unsicherheit durch Gaschromatographie - Teil 2: Unsicherheitsberechnungen (ISO 6974-2:2012)

This European Standard was approved by CEN on 14 May 2012.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN ISO 6974-2:2012) 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of an identical text or by endorsement, at the latest by November 2012, and conflicting national standards shall be withdrawn at the latest by November 2012.

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.

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Endorsement notice

The text of ISO 6974-2:2012 has been approved by CEN as a EN ISO 6974-2:2012 without any modification.

INTERNATIONAL STANDARD

ISO 6974-2

Second edition
2012-05-15

Natural gas — Determination of composition and associated uncertainty by gas chromatography —

Part 2: Uncertainty calculations

Gaz naturel — Détermination de la composition et de l'incertitude associée par chromatographie en phase gazeuse — Partie 2: Calculs d'incertitude

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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 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 6974-2 was prepared by Technical Committee ISO/TC 193, *Natural Gas*, Subcommittee SC 1, *Analysis of natural gas*.

This second edition of ISO 6974-2, together with ISO 6974-1:2012, cancels and replaces ISO 6974-1:2000 and ISO 6974-2:2001, which have been technically revised.

ISO 6974 consists of the following parts, under the general title *Natural Gas — Determination of composition and associated uncertainty by gas chromatography*:

— *Part 1: General guidelines and calculation of composition*

— *Part 2: Uncertainty calculations*

— *Part 3: Determination of hydrogen, helium, oxygen, nitrogen, carbon dioxide and hydrocarbons up to* C_8 *using two packed columns*

— *Part 4: Determination of nitrogen, carbon dioxide and* C_1 *to* C_5 *and* C_{6+} *hydrocarbons for a laboratory and on-line measuring system using two columns*

— *Part 5: Determination of nitrogen, carbon dioxide and* C_1 *to* C_5 *and* C_{6+} *hydrocarbons for a laboratory and on-line process application using three columns*

— *Part 6: Determination of hydrogen, helium, oxygen, nitrogen, carbon dioxide and* C_1 *to* C_8 *hydrocarbons using three capillary columns*

Future subsequent parts of ISO 6974 are planned.

Introduction

ISO 6974 describes methods of analysis of natural gas and methods for calculating component mole fractions and uncertainties. ISO 6974 (all parts) is intended for the measurement of H_2, He, O_2, N_2, CO_2 and hydrocarbons, either as individual components or as a group, for example all hydrocarbons above C_5, defined as C_{6+}. This approach is suitable for a range of end applications, including calibrating gas mixtures and providing natural gas composition and uncertainty data to be used in the calculation of calorific value and other additive physical properties of the gas. Details of these end applications are provided in ISO 6974-3 and subsequent parts of ISO 6974.

ISO 6974-1 gives guidelines for calculating the mole composition of natural gas, determined using one of the gas chromatographic methods described in ISO 6974-3 and subsequent parts of ISO 6974. ISO 6974-1 also describes all the essential steps for setting up an analysis, including outlining the structure of the analysis, defining the working ranges and establishing the analytical procedure.

This part of ISO 6974 describes the steps required to calculate the uncertainty of the component mole fractions of natural gas determined using gas chromatography.

ISO 6974-3 and subsequent parts of ISO 6974 describe different gas chromatographic methods. These methods cover both daily practice in the laboratory and on-line field applications. ISO 6974-1:2012, Annex A, provides a comparison of the characteristics of the analytical methods described in ISO 6974-3 and subsequent parts of ISO 6974.

It is intended that this part of ISO 6974 be used in conjunction with ISO 6974-1 and a method of analysis, e.g. ISO 6974-3 or subsequent parts of ISO 6974.

ISO 6974-1:2012, 5.5, describes the conventional normalization approach for calculating processed mole fractions from raw mole fractions. When conventional normalization is used for multiple operation methods without bridging, the uncertainties of the calculated mole fractions will be conservative. If a more accurate assessment of uncertainty is required, an alternative approach to normalization, using the generalized least squares (GLS) method, can be used; this is described in ISO 6974-1:2012, Annex B. Further alternative approaches are available for calculating processed mole fractions, including methane-by-difference (see ISO 6974-1:2012, Annex C) and data harmonization (see Reference [1]).