

Natural gas — Determination of composition with defined uncertainty by gas chromatography —

**Part 5: Determination of nitrogen,
carbon dioxide and C1 to C5 and C6+
hydrocarbons for a laboratory and
on-line process application using three
columns**

The European Standard EN ISO 6974-5:2001 has the status of a
British Standard

ICS 75.060

National foreword

This British Standard is the official English language version of EN ISO 6974-5:2001. It is identical with ISO 6974-5:2000.

The UK participation in its preparation was entrusted to Technical Committee PTI/15, Natural gas and gas analysis, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this committee can be obtained on request to its secretary.

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

This British Standard, having been prepared under the direction of the Sector Committee for Materials and Chemicals, was published under the authority of the Standards Committee and comes into effect on 15 August 2000

Summary of pages

This document comprises a front cover, an inside front cover, the EN ISO title page, the EN ISO foreword page, the ISO title page, pages ii to v, a blank page, pages 1 to 15 and a back cover.

The BSI copyright notice displayed in this document indicates when the document was last issued.

Amendments issued since publication

Amd. No.	Date	Comments
13863	17 July 2002	Implementation of the European Standard

© BSI 17 July 2002

ISBN 0 580 36318 X

English version

Natural gas - Determination of composition with defined uncertainty by gas chromatography - Part 5: Determination of nitrogen, carbon dioxide and C1 to C5 and C6+ hydrocarbons for a laboratory and on-line process application using three columns (ISO 6974-5:2000)

Gaz naturel - Détermination de la composition avec une incertitude définie par chromatographie en phase gazeuse - Partie 5: Détermination de l'azote, du dioxyde de carbone et des hydrocarbures (C1 à C5 et C6+) pour l'application du processus en continu employant trois colonnes (ISO 6974-5:2000)

Erdgas - Bestimmung der Zusammensetzung mit definierter Unsicherheit durch Gaschromatographie - Teil 5: Bestimmung von Stickstoff, Kohlenstoffdioxid und C1 bis C5 und C6+ Kohlenwasserstoffen für eine Labor- und Online-Prozessanwendung mit drei Säulen (ISO 6974-5:2000)

This European Standard was approved by CEN on 22 June 2001.

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 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



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

Management Centre: rue de Stassart, 36 B-1050 Brussels

CORRECTED 2002-03-13

Foreword

The text of the International Standard from Technical Committee ISO/TC 193 "Natural gas" of the International Organization for Standardization (ISO) has been taken over as a European Standard by CMC.

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 February 2002, and conflicting national standards shall be withdrawn at the latest by February 2002.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

NOTE Normative references to International Standards are listed in annex ZA (normative).

**Natural gas — Determination of
composition with defined uncertainty by
gas chromatography —**

Part 5:

**Determination of nitrogen, carbon dioxide
and C1 to C5 and C6+ hydrocarbons for a
laboratory and on-line process application
using three columns**

*Gaz naturel — Détermination de la composition avec une incertitude
définie par chromatographie en phase gazeuse —*

*Partie 5: Détermination de l'azote, du dioxyde de carbone et des
hydrocarbures (C1 à C5 et C6+) pour l'application du processus en continu
employant trois colonnes*



Reference number
ISO 6974-5:2000(E)

Contents

Page

Foreword.....	iv
Introduction	v
1 Scope	1
2 Normative references	2
3 Principle	2
4 Materials	3
5 Apparatus	3
6 Procedure	4
6.1 Gas chromatographic operating conditions.....	4
6.2 Calibration	5
6.3 Performance requirements	6
6.3.1 Peak resolution	6
6.3.2 Chromatogram	6
6.4 Determination.....	6
6.4.1 Sample valve purge	6
6.4.2 Analysis	7
7 Expression of results	7
7.1 Precision and accuracy.....	7
8 Test report	7
Annex A (informative) Procedure for setting valve timings and restrictor setting	11
Annex B (informative) Typical precision values	13
Bibliography	14

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 3.

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 part of ISO 6974 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 6974-5 was prepared by Technical Committee ISO/TC 193, *Natural gas*, Subcommittee SC 1, *Analysis of natural gas*.

This part as well as the other five parts of ISO 6974 cancel and replace ISO 6974:1984 which specified only one method.

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

- *Part 1: Guidelines for tailored analysis*
- *Part 2: Measuring-system characteristics and statistics for data treatment*
- *Part 3: Determination of hydrogen, helium, oxygen, nitrogen, carbon dioxide and hydrocarbons up to C₈ using two packed columns*
- *Part 4: Determination of nitrogen, carbon dioxide and C₁ to C₅ and C₆₊ hydrocarbons for a laboratory and on-line measuring system using two columns*
- *Part 5: Determination of nitrogen, carbon dioxide and C₁ to C₅ and C₆₊ hydrocarbons for a laboratory and on-line process application using three columns*
- *Part 6: Determination of hydrogen, helium, oxygen, nitrogen, carbon dioxide and hydrocarbons up to C₈ using three capillary columns*

Annexes A and B of this part of ISO 6974 are for information only.