



SLOVENSKI STANDARD
SIST EN ISO 10101-3:2000
01-december-2000

Nya Y'g_]d`b!`8c`c Yj Ub`Y`j cXY`dc`?Uf`!: [gW Yf`Y`j]`a YrcX]`!` "XY.`?i`ca Yff] b] dcg]cdY_`f!GC`%\$%\$%'`.%`-' Ł

Natural gas - Determination of water by the Karl Fischer method - Part 3: Coulometric procedure (ISO 10101-3:1993)

Erdgas - Bestimmung des Wassergehaltes nach Karl Fischer - Teil 3: Coulometrisches Verfahren (ISO 10101-3:1993)

Gaz naturel - Dosage de l'eau par la méthode de Karl Fischer- Partie 3: Méthode coulométrique (ISO 10101-3:1993)

STANDARD PREVIEW
 (standards.iteh.ai)
<https://standards.iteh.ai/catalog/standards/sist/bc06ea03-bdfb-4a70-95e7-a1a1b0b47abe/sist-en-iso-10101-3-2000>

Ta slovenski standard je istoveten z: **EN ISO 10101-3:1998**

ICS:

75.060 Zemeljski plin Natural gas

SIST EN ISO 10101-3:2000 en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 10101-3:2000

<https://standards.iteh.ai/catalog/standards/sist/bc06ea03-bdfb-4a70-95e7-a1a1b0b47abe/sist-en-iso-10101-3-2000>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 10101-3

March 1998

ICS 75.060

Descriptors: See ISO document

English version

Natural gas - Determination of water by the Karl Fischer method
- Part 3: Coulometric procedure (ISO 10101-3:1993)

Gaz naturel - Dosage de l'eau par la méthode de Karl
Fischer - Partie 3: Méthode coulométrique (ISO 10101-
3:1993)

Erdgas - Bestimmung des Wassergehaltes nach Karl
Fischer - Teil 3: Coulometrisches Verfahren (ISO 10101-
3:1993)

This European Standard was approved by CEN on 22 February 1998.

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 Central Secretariat 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 Central Secretariat 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.

<https://standards.iteh.ai/catalog/standards/sist/bc06ea03-bdfb-4a70-95e7-a1a1b0b47abc/sist-en-iso-10101-3-2000>



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

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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 an European Standard by CEN/CS.

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 September 1998, and conflicting national standards shall be withdrawn at the latest by September 1998.

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.

Endorsement notice

The text of the International Standard ISO 10101-3:1993 has been approved by CEN as a European Standard without any modification.

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

TECHNICAL STANDARD PREVIEW

(standards.iteh.ai)

SIST EN ISO 10101-3:2000

<https://standards.iteh.ai/catalog/standards/sist/bc06ea03-bdfb-4a70-95e7-a1a1b0b47abe/sist-en-iso-10101-3-2000>

ALINEVOIS ANIJEUSE
TIOGÉ NI TEGNIKI, OVIČINE AS OTEPTEBIM
ojufoacrom ni ofioasibmabroto as 2FI bscU
ANALISULL
.....7010
SVTICALDSAR IGOTSM OJ TBEVONG



Annex ZA (normative)
Normative references to international publications
with their relevant European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN</u>	<u>Year</u>
ISO 10101-1	1993	Natural gas - Determination of water by the Karl Fischer method - Part 1: Introduction	EN ISO 10101-1	1998

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN ISO 10101-3:2000](https://standards.iteh.ai/catalog/standards/sist/bc06ea03-bdfb-4a70-95e7-a1a1b0b47abe/sist-en-iso-10101-3-2000)

<https://standards.iteh.ai/catalog/standards/sist/bc06ea03-bdfb-4a70-95e7-a1a1b0b47abe/sist-en-iso-10101-3-2000>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN ISO 10101-3:2000](https://standards.iteh.ai/catalog/standards/sist/bc06ea03-bdfb-4a70-95e7-a1a1b0b47abe/sist-en-iso-10101-3-2000)

<https://standards.iteh.ai/catalog/standards/sist/bc06ea03-bdfb-4a70-95e7-a1a1b0b47abe/sist-en-iso-10101-3-2000>

INTERNATIONAL
STANDARD

ISO
10101-3

First edition
1993-10-01

**Natural gas — Determination of water by
the Karl Fischer method —**

Part 3:

**Coulometric procedure
(standards.iteh.ai)**

Gaz naturel — Dosage de l'eau par la méthode de Karl Fischer —

Partie 3: Méthode coulométrique
<https://standards.iteh.ai/catalog/standards/sist/b06c9f3-bdfb-4a70-95e7-a1a1b0b47abe/sist-en-iso-10101-3-2000>



Reference number
ISO 10101-3:1993(E)

ISO 10101-3:1993(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.

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.

International Standard ISO 10101-3 was prepared by Technical Committee ISO/TC 193, *Natural gas*, Sub-Committee SC 1, *Analysis of natural gas*.

ISO 10101 consists of the following parts, under the general title *Natural gas* — *Determination of water by the Karl Fischer method*:

- Part 1: *Introduction*
- Part 2: *Titration procedure*
- Part 3: *Coulometric procedure*

© ISO 1993

All rights reserved. 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 the publisher.

International Organization for Standardization
Case Postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

Natural gas — Determination of water by the Karl Fischer method —

Part 3: Coulometric procedure

WARNING — Local safety regulations must be taken into account, when the equipment is located in hazardous areas. Due to the toxicity and odour of pyridine, the user should ensure that there is adequate ventilation.

iTeh STANDARD PREVIEW

(standards.iteh.ai)

1 Scope

This part of ISO 10101 specifies a coulometric procedure for the direct determination of water content by the Karl Fischer method. The method applies to natural gas and other gases which do not react with Karl Fischer reagents.

It applies to water concentrations between 5 mg/m³ and 5 000 mg/m³. Volumes are expressed at a temperature of 273,15 K (0 °C) and a pressure of 101,325 kPa (1 atm).

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 10101. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 10101 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 5725:1986, *Precision of test methods — Determination of repeatability and reproducibility for a standard test method by inter-laboratory tests.*

ISO 10101-1:1993, *Natural gas — Determination of water by the Karl Fischer method — Part 1: Introduction.*

3 Principle

A measured volume of gas is passed through the titration cell, where the water is absorbed by the anodic solution. The iodine required for the determination of water by the Karl Fischer reaction is generated coulometrically from iodide. The quantity of electricity is directly proportional to the mass of iodine generated and hence to the mass of water determined.

The principle and chemical reactions of the Karl Fischer method are given in ISO 10101-1:1993, clauses 3 and 4; interferences are also described in clause 4 of ISO 10101-1.

4 Reagents

4.1 Reagents specially formulated for coulometric determination.

NOTE 1 A typical composition of the anodic solution is as follows: 34 % (m/m) trichloromethane, 3 % (m/m) tetrachloromethane, 22 % (m/m) methanol, the remainder being sulfur dioxide and pyridine.

Other reagents may be used, for the coulometric determination by the Karl Fischer method, if they have shown to be satisfactory.