

**Looduslik gaas. Vee määramine Karl
Fischeri meetodil. Osa 2:
Tiitrimisprotseduur**

Natural gas - Determination of water by the Karl
Fischer method - Part 2: Titration procedure

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 10101-2:2000 sisaldab Euroopa standardi EN ISO 10101-2:1998 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 10.05.2000 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 10101-2:2000 consists of the English text of the European standard EN ISO 10101-2:1998.</p> <p>This document is endorsed on 10.05.2000 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala: EN ISO 10101 käesolev osa esitab tiitrimisprotseduuri vee sisalduse määramiseks looduslikus gaasis. Mahud on väljendatud kuupmeetrites temperatuuril 273,15 K (0 °C) ja rõhul 101,325 kPa (1 atm). Käesoleval juhul on see rakendatav vee kontsentratsioonide vahemikus 5 mg/m³ ja 5000 mg/m³.</p>	<p>Scope:</p>
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ICS 75.060

Võtmesõnad: gaasianalüüs, karl fischeri meetod, keemiline analüüs, looduslik gaas, mahtanalüüs, sisalduse määramine, vesi

ICS 75.060

Descriptors: Natural gas, analysis, water content.

English version

**Natural gas –
Determination of water by the Karl Fischer method
Part 2: Titration procedure
(ISO 10101-2 : 1993)**

Gaz naturel – Dosage de l'eau par la
méthode de Karl Fischer –
Partie 2: Méthode titrimétrique
(ISO 10101-2 : 1993)

Erdgas – Bestimmung des
Wassergehaltes nach Karl Fischer –
Teil 2: Titrimetrisches Verfahren
(ISO 10101-2 : 1993)

This European Standard was approved by CEN on 1998-02-22.

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.

The European Standards exist 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.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

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

Foreword

International Standard

ISO 10101-2 : 1993 Natural gas – Determination of water by the Karl Fischer method – Part 2: Titration procedure,

which was prepared by ISO/TC 193 'Natural gas' of the International Organization for Standardization, has been adopted by Technical Committee CEN/TC 19 'Petroleum products, lubricants and related products', the Secretariat of which is held by NNI, as a European Standard.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by September 1998 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard:

Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 10101-2 : 1993 was approved by CEN as a European Standard without any modification.

NOTE: Normative references to international publications are listed in Annex ZA (normative).

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.

1 Scope

This part of ISO 10101 specifies a titrimetric procedure for the determination of water content in natural gas. Volumes are expressed in cubic metres at a temperature of 273,15 K (0 °C) and a pressure of 101,325 kPa (1 atm). It applies to water concentrations between 5 mg/m³ and 5 000 mg/m³.

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 383:1976, *Laboratory glassware — Interchangeable conical ground joints*.

ISO 7504:1984, *Gas analysis — Vocabulary*.

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

ISO 10101-3:1993, *Natural gas — Determination of water by the Karl Fischer method — Part 3: Coulometric procedure*.

3 Principle

A measured volume of gas is passed through a cell containing a relatively small volume of absorbent solution. Water in the gas is extracted by the absorbent solution and, subsequently titrated with Karl Fischer reagent. The design of the cell and the absorbent solution are chosen so as to ensure efficient collection of the water at the high flowrates necessary.

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.

Clause 4 of ISO 10101-1:1993 describes interfering substances which may be present in natural gas and corrections for the interference of hydrogen sulfide and mercaptans.

4 Reagents

4.1 Karl Fischer reagent, of which the water equivalent is approximately 5 mg/ml.

NOTE 1 For most applications, commercially available Karl Fischer reagent with a water equivalent of approximately 5 mg/ml has been found adequate. The reagent may be provided as two solutions which are mixed before use.