

Deutsche Akkreditierungsstelle GmbH

Annex to the Accreditation Certificate D-PL-14154-01-00 according to DIN EN ISO/IEC 17025:2018

Valid from: **18.11.2020**

Date of issue: 13.01.2021

Holder of certificate:

**Open Grid Europe GmbH
Gas Quality Competence Centre
Gladbecker Straße 404, 45326 Essen**

Tests in the fields:

Physical, physico-chemical and chemical analysis of natural gas and other-gaseous fuels, natural gas as fuel, test and high purity gases, leakage gases and gases from corrosion processes by gas chromatography

The testing laboratory is permitted to apply the listed standardised or equivalent test methods with different versions of the standards without obtaining prior notification and consent from DAkkS.

The laboratory maintains a current list of all test methods within a flexible scope of accreditation.

The management system requirements in DIN EN ISO/IEC 17025 are written in language relevant to operations of testing laboratories and operate generally in accordance with the principles of DIN EN ISO 9001.

*The certificate together with its annex reflects the status at the time of the date of issue. The current status of the scope of accreditation can be found in the database of accredited bodies of Deutsche Akkreditierungsstelle GmbH.
<https://www.dakks.de/en/content/accredited-bodies-dakks>*

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1 Analysis of natural gas and gaseous fuels (coking plant gas, associated gas, refinery gas, sour gas, biogas, landfill gas, SNG, hydrogen, LNG, LPG, pyrolysis gas)

1.1 Determination of gas composition by gas chromatography with standard detectors (FID, WLD, HID)

DIN EN ISO 6974-1 2012-11	Natural gas – Determination of composition and associated uncertainty by gas chromatography – Part 1: General guidelines and calculation of composition
DIN EN ISO 6974-6 2005-08	Natural gas – Determination of composition with defined uncertainty by gas chromatography – Part 6: Determination of hydrogen, helium, oxygen, nitrogen, carbon dioxide and C1 to C8 hydrocarbons using three capillary columns
DIN EN ISO 6975 2005-09 Corrigendum 1 2008-09	Natural gas – Extended analysis – Gas-chromatographic method
ISO 6974-1 2012-05 Technical Corrigendum 1 2012-11	Natural gas – Determination of composition and associated uncertainty by gas chromatography – Part 1: General guidelines and calculation of composition
ISO 6974-6 2002-10	Natural gas – Determination of composition with defined uncertainty by gas chromatography – Part 6: Determination of hydrogen, helium, oxygen, nitrogen, carbon dioxide and C1 to C8 hydrocarbons using three capillary columns
ISO 6975 1997-04	Natural gas – Extended analysis – Gas-chromatographic method
DIN 51894 2012-09	Gas analysis – Gas chromatographic method for fuel gases/natural gas and other gas mixtures
ASTM D 1945 2014	Standard Test Method for Analysis of Natural Gas by Gas Chromatography
ASTM D 1946 1990	Standard Practice for Analysis of Reformed Gas by Gas Chromatography
ASTM UOP 539 2012	Refinery Gas Analysis by Gas Chromatography

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DIN EN ISO 6974-2 2012-11	Natural gas – Determination of composition and associated uncertainty by gas chromatography – Part 2: Uncertainty calculations
ISO 6974-2 2012-05	Natural gas – Determination of composition and associated uncertainty by gas chromatography – Part 2: Uncertainty calculations
ISO/TR 24094 2006-05	Analysis of natural gas – Validation methods for gaseous reference materials

1.2 Determination of gas concomitant substances by coulometric titration

UOP910 - 07 2007	Total Chloride in LPG and Gaseous Hydrocarbons by Microcoulometry
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1.3 Sampling and determination of concomitant substances by atomic spectroscopy (cold-vapour AAS; CV-AAS)

DIN EN ISO 6978-2 2005-09	Natural gas – Determination of mercury – Part 2: Sampling of mercury by amalgamation on gold/platinum alloy <i>(sampling and analysis)</i>
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1.4 Determination of gas concomitant substances by gas chromatography with specific detectors (SCD)

DIN EN ISO 19739 2009-08	Natural gas – Determination of sulfur compounds using gas chromatography
ISO 19739 2004-05 Technical Corrigendum 1 2009-04	Natural gas – Determination of sulfur compounds using gas chromatography
DIN 51855-8 1997-06	Testing of gaseous fuels and other gases – Determination of sulphur compounds content – Part 8: Gaschromatographic determination of dihydrogen sulphide, carbonyl sulphide and other sulphur compounds using specific detectors

1.5 Physical and physico-chemical parameters

DIN EN ISO 6976 2016-12	Natural gas – Calculation of calorific values, density, relative density and Wobbe index from composition
ISO 6976 2016-08	Natural gas – Calculation of calorific values, density, relative density and Wobbe index from composition

2 Analysis of natural gas as fuel by gas chromatography with standard detectors (FID, WLD, HID)

Test method	Description	Procedure matrix number ^{*)}
DIN EN ISO 6976 2016-12	Calorific value Natural gas – Calculation of calorific values, density, relative density and Wobbe indices from composition	1.11.11
DIN EN ISO 6976 2016-12	Absolute density Natural gas – Calculation of calorific values, density, relative density and Wobbe indices from composition	1.11.22
DIN EN 16726 2019-11	Methane number (MWM method) Gas infrastructure – Quality of gas – Group H	
DIN EN ISO 6975 2005-09 Corrigendum 1 2008-09	Methane content Natural gas – Extended analysis – Gas chromatographic method	1.11.63
DIN EN ISO 6975 2005-09 Corrigendum 1 2008-09	Total content C2 hydrocarbons Natural gas – Extended analysis – Gas chromatographic method	1.11.94

DIN EN ISO 6975 2005-09 Corrigendum 1 2008-09	Total content > C2 hydrocarbons Natural gas – Extended analysis – Gas chromatographic method	1.11.94
DIN EN ISO 6975 2005-09 Corrigendum 1 2008-09	Propane content Natural gas – Extended analysis – Gas chromatographic method	1.11.80
DIN EN ISO 6975 2005-09 Corrigendum 1 2008-09	Butane content Natural gas – Extended analysis – Gas chromatographic method	1.11.17
DIN EN ISO 6975 2005-09 Corrigendum 1 2008-09	Pentane content Natural gas – Extended analysis – Gas chromatographic method	1.11.76
DIN EN ISO 6975 2005-09 Corrigendum 1 2008-09	Content of hexane and higher hydrocarbons Natural gas – Extended analysis – Gas chromatographic method	1.11.45
DIN EN ISO 6975 2005-09 Corrigendum 1 2008-09	Oxygen content Natural gas – Extended analysis – Gas chromatographic method	1.11.85
DIN EN ISO 6975 2005-09 Corrigendum 1 2008-09	Hydrogen content Natural gas – Extended analysis – Gas chromatographic method	1.11.107

DIN EN ISO 6975 2005-09 Corrigendum 1 2008-09	Total content of nitrogen (N₂) and carbon dioxide (CO₂) Natural gas – Extended analysis – Gas chromatographic method	1.11.95
DIN 51855-8 1997-06	Hydrogen sulphide content Testing of gaseous fuels and other gases – Determination of sulphur compounds content – Part 8: Gaschromatographic determination of dihydrogen sulphide, carbonyl sulphide and other sulphur compounds using specific detectors	1.11.43
DIN EN ISO 6326-1 2009-10	Mercaptan sulphur content Determination of sulphur compounds – Part 1: General introduction / Section 5	1.11.42
DIN EN ISO 15403 -1 2009-10	Natural gas – Natural gas for use as a compressed fuel for vehicles – Part 1: Designation of the quality	
ISO 15403-1 2006-10	Natural gas – Natural gas for use as a compressed fuel for vehicles – Part 1: Designation of the quality	
ISO/TR 15403-2 2006-08	Natural gas – Natural gas for use as a compressed fuel for vehicles – Part 2: Specification of the quality	
DVGW G 264 (A) 2019-02	Natural gas as fuel – Sampling and analysis (Deviation: Here analysis only)	

3 Analysis of test and high purity gases by gas chromatography with standard detectors (FID, WLD, HID) and specific detectors (SCD)

DIN EN ISO 6143 2006-11	Gas analysis – Comparison methods for determining and checking the composition of calibration gas mixtures
ISO 6143 2001-05	Gas analysis – Comparison methods for determining and checking the composition of calibration gas mixtures

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DIN EN ISO 14912 2006-11	Gas analysis – Conversion of gas mixture composition data
ISO 14912 2003 Technical Corrigendum 1 2006-08	Gas analysis – Conversion of gas mixture composition data

4 Analysis of emissions (e.g. leakage gases) and gases from corrosion processes by gas chromatography with standard detectors (FID, WLD, HID)

ISO 14912 2003 Technical Corrigendum 1 2006-08	Gas analysis – Conversion of gas mixture composition data
DIN EN ISO 14912 2006-11	Gas analysis – Conversion of gas mixture composition data
US EPA Test Method 3C 1996-06 <i>(method withdrawn)</i>	Carbon Dioxide, Methane, Nitrogen, and Oxygen from Stationary Sources
US EPA Test Method 18 1996-09 <i>(method withdrawn)</i>	Measurement of Gaseous Organic Compound Emissions by Gas Chromatography

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Abbreviations used:

ASTM	American Society for Testing and Materials
DIN	Deutsches Institut für Normung e.V. (German Institute for Standardisation)
DVGW	Deutscher Verein des Gas- und Wasserfaches e.V. (German Association of the Gas and Water Industry)
EN	European standard
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
LNG	Liquefied Natural Gas
LPG	Liquefied Petroleum Gas
UOP	Universal Oil Products
US EPA	United States Environmental Protection Agency

Procedure matrix number+¹ Procedure matrix (requirements for accreditation in the field of mineral oil and related products, 71 SD 1 020, 25.08.2017)