DAkkS
Deutsche
Akkreditierungsstelle

Accreditation

The Deutsche Akkreditierungsstelle attests with this **Accreditation Certificate** that

TAZ Gesellschaft für Analyse und Meßtechnik mbH
Joseph-von-Fraunhofer-Straße 4, 86551 Aichach

operates a testing laboratory that fulfills the requirements according to DIN EN ISO/IEC 17025:2018 for those conformity assessment activities specified in detail in the annexes listed below. This includes additional existing legal and normative requirements for the testing laboratory including those in relevant sectoral schemes, provided that these are explicitly confirmed in the annexes listed below.

D-PL-11169-01-01 **Valid from: 29.12.2025**
D-PL-11169-01-02 **Valid from: 29.12.2025**

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

This accreditation was issued in accordance with Art. 5 Para. 1 Sentence 2 of Regulation (EC) 765/2008, after an accreditation procedure was carried out in compliance with the minimum requirements of DIN EN ISO/IEC 17011 and on the basis of a review and decision of the appointed accreditation committees.

This accreditation certificate only applies in connection with the notice of 29.12.2025. It consists of this cover sheet, the reverse side of the cover sheet and the corresponding annex

Registration number of the accreditation certificate: **D-PL-11169-01-00**

Berlin, 29.12.2025

Dr. rer. nat. Olga Lettau | Head of Technical Unit

Translation issued: 05.03.2026

This accreditation certificate was issued by the Deutsche Akkreditierungsstelle GmbH (DAkkS). It is digital sealed and valid without signature. It reflects the status as indicated by the date of issue. The current status of any valid and surveyed accreditation can be found in the directory of accredited bodies maintained by Deutsche Akkreditierungsstelle GmbH (www.dakks.de).

This document is a translation. The definitive version is the original German accreditation certificate.

See notes overleaf

Deutsche Akkreditierungsstelle GmbH

Office Berlin
Spittelmarkt 10
10117 Berlin

The Deutsche Akkreditierungsstelle GmbH (DAkkS) is the entrusted national accreditation body of the Federal Republic of Germany according to § 8 section 1 AkkStelleG in conjunction with § 1 section 1 AkkStelleGBV. DAkkS is designated as the national accreditation authority by Germany according to Art. 4 Para. 4 of Regulation (EC) 765/2008 and clause 4.7 of DIN EN ISO/IEC 17000.

Pursuant to Art. 11 section 2 of Regulation (EC) 765/2008, the accreditation certificate shall be recognised as equivalent by the national authorities within the scope of this Regulation as well as by the WTO member states that have committed themselves in bilateral or multilateral mutual agreements to recognise the certificates of accreditation bodies that are members of ILAC or IAF as equivalent.

DAkkS is a signatory to the multilateral agreements for mutual recognition of the European co-operation for Accreditation (EA), International Accreditation Forum (IAF) and International Laboratory Accreditation Co-operation (ILAC).

The up-to-date state of membership can be retrieved from the following websites:
EA: www.european-accreditation.org
ILAC: www.ilac.org
IAF: www.iaf.nu

This accreditation certificate is the property of the German Accreditation Body

Deutsche Akkreditierungsstelle

Annex to the Accreditation Certificate D-PL-11169-01-01 according to DIN EN ISO/IEC 17025:2018

Valid from: **29.12.2025**

Date of issue: 29.12.2025

This annex is part of the Accreditation Certificate D-PL-11169-01-00.

Holder of the Accreditation Certificate:

TAZ Gesellschaft für Analyse und Meßtechnik mbH
Joseph-von-Fraunhofer-Straße 4, 86551 Aichach

with the location

TAZ Gesellschaft für Analyse und Meßtechnik mbH
Joseph-von-Fraunhofer-Straße 4, 86551 Aichach

The testing laboratory meets the requirements of DIN EN ISO/IEC 17025:2018 to carry out the conformity assessment activities listed in this annex. The testing laboratory meets additional legal and normative requirements, if applicable, including those in relevant sectoral schemes, provided that these are explicitly confirmed below.

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

This annex to the certificate was issued by the Deutsche Akkreditierungsstelle GmbH (DAkkS) and is digitally sealed.
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Tests in the fields:

spectrometric analyses of metallic materials using spark spectrometry (S-OES) and glow discharge optical emission spectrometry (GDOES) as well as deep profile analyses using glow discharge spectrometry;
determination of chemical composition using X-ray fluorescence spectrometry (XRF) of metallic and non-metallic materials;
determination of N-, O-, H-, C- and S-concentrations of metallic materials using hot extraction with carrier gas (combustion);
Analysis of metallic materials using mobile spark spectrometry (S-OES) and mobile X-ray fluorescence spectrometry (XRF)

Flexible scope of accreditation:
The testing laboratory is permitted to use the standardized or equivalent test methods listed here within the marked test scopes without the need for prior information and approval by DAkkS,
[Flex A] the use of the standardized or equivalent test methods listed here with different issue dates.
[Flex B] permits the free selection of standardized or equivalent test methods.

The test methods listed are examples. The testing laboratory has an up-to-date list of all test methods in the flexible accreditation scope. The list is publicly available on the website of the testing laboratory.

Analysis of metallic materials

1 Sampling [Flex A]

DIN EN 2003-010 2007-07	Aerospace series - Titanium and titanium alloys - Test methods - Part 10: Sampling for determination of hydrogen content

2 Determination of elements in metallic materials using spark spectrometry and glow discharge spectrometry

2.1 Spark Atomic Emission Spectrometry [Flex B]

ASTM E 415 2021	Standard Test Method for Analysis of Carbon and Low-Alloy Steel by Spark Atomic Emission Spectrometry
ASTM E 1086 2022	Standard Test Method for Analysis of Austenitic Stainless Steel by Spark Atomic Emission Spectrometry
ASTM E 1251 2024	Standard Test Method for Analysis of Aluminium and Aluminium Alloys by Spark Atomic Emission Spectrometry

ASTM E 1999 2023	Standard Test Method for Analysis of Cast Iron by Spark Atomic Emission Spectrometry
ASTM E 2209 2022	Standard Test Method for Analysis of High Manganese Steel by Spark Atomic Emission Spectrometry
ASTM E 2994 2021	Standard Test Method for Analysis of Titanium and Titanium Alloys by Spark Atomic Emission Spectrometry and Glow Discharge Atomic Emission Spectrometry (Performance-Based Method)
ASTM E 3047 2022	Standard Test Method for Analysis of Nickel Alloys by Spark Atomic Emission Spectrometry
DIN EN 15079 2015-07	Copper and copper alloys - Analysis by spark optical emission spectrometry (S-OES)
DIN EN 14726 2019-06	Aluminium and aluminium alloys - Determination of the chemical composition of aluminium and aluminium alloys by spark optical emission spectrometry
TAZ-VA 14 2025-03	Standard operating procedure for the spectrometric analysis using spark spectrometry of Mg, Al, Ti, Co, Ni, Cu, Zn based materials and on steel in the following finishes: low alloyed steel, high alloyed steel, automated steel, high speed steel and cast iron
TAZ-VA 27 2025-03	Determination of chemical composition using mobile spectralanalyse (optical emission spectrometry – OES) of Al, Fe and Cu based materials

2.2 Glow Discharge Atomic Emission Spectrometry [Flex B]

ASTM E 2994 2021	Standard Test Method for Analysis of Titanium and Titanium Alloys by Spark Atomic Emission Spectrometry and Glow Discharge Atomic Emission Spectrometry (Performance-Based Method)
DIN ISO 14707 2023-05	Surface chemical analysis - Glow discharge optical emission spectrometry (GD-OES) - Introduction to use
DIN EN ISO 3887 2023-12	Steels - Determination of the depth of decarburization
TAZ-VA 16 2025-03	Determination of alloy elements of following matrixes using glow discharge optical emission spectroscopy: Cu, Al, Ti, Ni, Zn and steel in finishes: low alloyed steel, high alloyed steel, automated steel, high speed steel and cast iron

TAZ-VA 25 2025-03	Standard operation procedure on qualitative and quantitative glow discharge optical spectroscopy GDOS-deep profile analysis for Mg, Al, Ti, Fe, Co, Ni, Cu, Zn based materials and plastics

3 X-ray fluorescence analysis of metallic and non-metallic materials

TAZ-VA 57 2025-03	Determination of elements using X-ray fluorescence analysis (XRF) of Mg, Al, Ti, Fe, NI, Cu, Zn, Sn, W based materials as well as precious metals (Ag, Au, Pt)
TAZ-VA 26 2025-03	Test for mixed up components using mobile X-ray fluorescence (XRF)

4 Determination of elements in metallic materials using conventional detectors (infrared spectroscopy/thermal conductivity) after combustion and hot extraction [Flex B]

DIN EN ISO 9556 2002-04	Steel and iron - Determination of total carbon content - Infrared absorption method after combustion in an induction furnace
DIN EN ISO 15350 2010-08	Steel and iron - Determination of total carbon and sulfur content - Infrared absorption method after combustion in an induction furnace (routine method)
ASTM E 1019 2024	Standard Test Methods for Determination of Carbon, Sulfur, Nitrogen, and Oxygen in Steel, Iron, Nickel, and Cobalt Alloys by Various Combustion and Inert Gas Fusion Techniques
ASTM E 1409 2013	Standard Test Method for Determination of Oxygen and Nitrogen in Titanium and Titanium Alloys by Inert Gas Fusion
ASTM E 1447 2022	Standard Test Method for Determination of Hydrogen in Titanium and Titanium Alloys by Inert Gas Fusion Thermal Conductivity/ Infrared Detection Method
ASTM E 1941 2010	Standard Test Method for Determination of Carbon in Refractory and Reactive Metals and Their Alloys by Combustion Analysis
ASTM E 2575 2019	Standard Test Method for Determination of Oxygen in Copper and Copper Alloys by Inert Gas Fusion
ASTM E 2792 2021	Standard Test Method for Determination of Hydrogen in Aluminium and Aluminium Alloys by Inert Gas Fusion

Abbreviations used:

DIN	Deutsches Institut für Normung e.V. – German institute for standardization
EN	Europäische Norm – European Standard
IEC	International Electrotechnical Commission
ISO	International Organization for Standardisation
ASTM E	American Society for Testing and Materials
TAZ-VA	In-house method of the CAB

Deutsche Akkreditierungsstelle

Annex to the Accreditation Certificate D-PL-11169-01-02 according to DIN EN ISO/IEC 17025:2018

Valid from: **29.12.2025**

Date of issue: 29.12.2025

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The testing laboratory meets the requirements of DIN EN ISO/IEC 17025:2018 to carry out the conformity assessment activities listed in this annex. The testing laboratory meets additional legal and normative requirements, if applicable, including those in relevant sectoral schemes, provided that these are explicitly confirmed below.

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

Tests in the fields:

Metallographic examinations, hardness tests, and scanning electron microscope examinations on metallic materials

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This document is a translation. The definitive version is the original German annex to the accreditation certificate.

Flexible Scope of Accreditation:

Within the indicated test areas the testing laboratory is permitted without being required to prior inform and obtain approval from DAkkS

[Flex A] **to use standardised or equivalent test methods listed here with different issue dates.**

[Flex B] **to have the free choice from standardised or equivalent test methods.**

The test methods listed are examples. The testing laboratory has an up-to-date list of all test methods within the flexible scope of accreditation. The list is publicly available on the website of the testing laboratory

1 Hardness testing of metallic materials using indenters [Flex B]

DIN EN ISO 4507 2007-05	Sintered ferrous materials, carburized or carbonitrided – Determination and verification of case-hardening depth by a micro-hardness test
DIN EN ISO 6506-1 2015-02	Metallic materials – Brinell hardness test – Part 1: Test method
DIN EN ISO 6507-1 2024-01	Metallic materials – Vickers hardness test – Part 1: Test method
DIN EN ISO 6508-1 2024-04	Metallic materials – Rockwell hardness test – Part 1: Test method
DIN EN ISO 9015-1 2011-05	Destructive tests on welds in metallic materials – Hardness testing – Part 1: Hardness test on arc welded joints
DIN EN ISO 9015-2 2016-10	Destructive tests on welds in metallic materials – Hardness testing – Part 2: Microhardness testing of welded joints
DIN EN ISO 4545-1 2024-01	Metallic materials – Knoop hardness test – Part 1: Test method

2 Metallography [Flex A]

SEP 1614 1996-09	Microscopic inspection of hot-work tool steels
DIN EN ISO 2624 1995-08	Copper and copper alloys – Estimation of average grain size
DIN EN ISO 4499-3 2016-10	Hardmetals – Metallographic determination of microstructure – Part 3: Measurement of microstructural features in Ti (C, N) and WC / cubic carbide based hardmetals
DIN EN ISO 4499-4 2016-10	Hardmetals – Metallographic determination of microstructure – Part 4: Characterisation of porosity, carbon defects and eta-phase content

The following test procedure is outside the scope of flexibilization:

TAZ-VA 41 2025-03	Evaluation of layers and surfaces on metallographic sections

3 Determination of the layer thickness of metallic materials using microscopic methods [Flex B]

DIN EN ISO 1463 2021-08	Metallic and oxide coatings – Measurement of coating thickness – Microscopical method
DIN 30902 2016-12	Heat treatment of ferrous materials – Light-microscopical determination of the depth and porosity of the compound layer of nitrided and nitro-carburized ferrous parts
DIN EN ISO 18203 2022-07	Steel – Determination of the thickness of surface-hardened layers

4 Visual evaluation of inclusions and grain sizes based on image series [Flex B]

ASTM E45 2018	Standard Test Method for Determining the Inclusion Content of Steel
ASTM E112 2024	Standard Test Method for Determining Average Grain Size

DIN EN ISO 643 2024-12	Steels – Micrographic determination of the apparent grain size
DIN EN ISO 945-1 2019-10	Microstructure of cast irons – Part 1: Graphite classification by visual analysis
SEP 1520 1998-09	Microscopic examination of carbide structure in steels by means of diagram series
SEP 1572 2019-03	Microscopic testing of free-cutting steels for sulfide non-metallic inclusions using standard images
ISO 4967 2013-07	Steel – Determination of content of non-metallic inclusions – Micrographic method using standard diagrams
DIN EN 10247 2007-07	Micrographic examination of the non-metallic inclusion content of steels using standard pictures

5 Scanning electron microscopy

TAZ-VA 32 2025-03	Scanning electron microscopy (SEM) Examination of surfaces, coating systems, and fracture surfaces of metallic and non-metallic materials – Micro-area analysis – Semi-quantitative determination of elements with atomic numbers greater than 5 using energy dispersive X-ray microanalysis (EDX) of metallic and non-metallic materials

Abbreviations used:

DIN	Deutsches Institut für Normung e.V. – German institute for standardization
EN	Europäische Norm – European Standard
IEC	International Electrotechnical Commission
ISO	International Organization for Standardisation
ASTM	American Society for Testing and Materials
SEP	Steel and iron test sheets from the Association of German Eisenhüttenleute
TAZ-VA	In-house procedure of the TAZ Society for Analysis and Measurement Technology mbH