DAkkS
Deutsche
Akkreditierungsstelle

Deutsche Akkreditierungsstelle

Annex to the Accreditation Certificate D-K-15185-01-00 according to DIN EN ISO/IEC 17025:2018

Valid from: **07.02.2023**

Date of issue: 07.02.2023

Holder of accreditation certificate:

Merck KGaA
Kalibrierlaboratorium für chemische Messgrößen
Frankfurter Straße 250, 64293 Darmstadt

The calibration laboratory meets the minimal requirements of DIN EN ISO/IEC 17025:2018 and, if applicable, additional legal and normative requirements, including those in relevant sectoral schemes, in order to carry out the conformity assessment activities listed below.
The management system requirements of DIN EN ISO/IEC 17025 are written in the language relevant to the operations of calibration laboratories and confirm generally with the principles of DIN EN ISO 9001.

Calibration in the fields:

Chemical and medical quantities

Chemical analysis and reference materials

- **pH value**
- **Electrolytic conductivity**
- **Mass fraction of elements in standard solutions**
- **Mass concentration of elements in standard solutions**
- **Mass fraction of elements in multi standard solutions**
- **Mass concentration of elements in multi standard solutions**
- **Mass fraction of titrimetric standards**
- **Mass fraction of water in water standards and titrimetric standards**
- **Amount-of-substance concentration in volumetric solutions**
- **Mass fraction in ion chromatography standard solutions**
- **Mass concentration in ion chromatography standard solutions**

This certificate annex is only valid together with the written accreditation certificate and reflects the status as indicated by the date of issue. The current status of any given scope of accreditation can be found in the directory of accredited bodies maintained by Deutsche Akkreditierungsstelle GmbH at https://www.dakks.de.

Abbreviations used: see last page

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Permanentes Laboratory

Calibration and Measurement Capabilities (CMC)

Measured quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement	Remarks
pH value pH reference substances	1 to 11	differential potentiometry Inhouse procedure according SOP 20120940, Version 3/2020	0.003	Specified are the absolute measurement uncertainties. These depend on the deployed primary reference material.
pH value pH reference buffer solutions	1 to 11	differential potentiometry Inhouse procedure according SOP 20120940, Version 3/2020	0.003	
pH value pH buffer solutions	0 to < 10	multipoint calibration by means of glass electrode Inhouse procedure according SOP 20404229, Version 2/2020	0.01	
pH value pH buffer solutions	10 to 14	multipoint calibration by means of glass electrode Inhouse procedure according SOP 20404229, Version 2/2020	0.02	
Electrolytic conductivity Reference material	0.5 µS cm^{-1} to < 15 µS cm^{-1}	conductivity measuring Inhouse procedure according SOP 20120941, Version 5/2020	25 %	Specified are the relative measurement uncertainties. These depend on the deployed primary reference material.
	15 µS cm^{-1} to < 1000 µS cm^{-1}		0.4 %	
	0.1 Sm^{-1} to 12 Sm^{-1}		0.24 %	
Mass fraction of titrimetric standards	≥ 95.00 %	Titrimetry Inhouse procedure according SOP 20404230, Version 2/2020		Specified are the absolute measurement uncertainties. These depend on the deployed primary reference material.
Tris(hydroxymethyl)-aminomethane			0.04 %	
Sodiumc arbonate			0.05 %	
Potassium hydrogen phthalate			0.02 %	
Benzoic acid			0.05 %	
Sodium chloride			0.02 %	
Zinc			0.02 %	
Calcium carbonate			0.03 %	
Potassium dichromate			0.04 %	
Disoldium oxalate			0.05 %	
Iron(II)ethylene diammonium sulfate			0.05 %	
Potassium iodate			0.02 %	

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Calibration and Measurement Capabilities (CMC)

Measured quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement	Remarks
Amount-of-substance concentration in volumetric solutions	0.003 mol/L to 10 mol/L	Titrimetric Inhouse procedure according SOP 20404235, Version 2/2020 Measurement method via metrological traceability to primary standards Measurement method via metrological traceability to primary solutions Measurement method via metrological traceability to volumetric solutions	0.1 % to 0.3 %	Specified are the relative measurement uncertainties. These depend on the deployed primary reference material.
Mass fraction of ion chromatography standard solutions	900 mg/kg to 1100 mg/kg	Titrimetric Inhouse procedure according SOP 20689669, Version 1/2022 Measurement method via metrological traceability to volumetric solutions	0.1 % to 0.5 %	Specified are the relative measurement uncertainties. These depend on the deployed primary reference material.
Mass concentration of ion chromatography standard solutions	900 mg/L to 1100 mg/L		0.1 % to 0.5 %	
Mass fraction of water in water standards and titrimetric standards	15 mg/kg to < 0.1 g/kg	KF coulometry direct measurement KF oven technology Inhouse procedure according SOP 20404233, Version 2/2020	0.95 mg/kg to 3.2 mg/kg	Specified are the absolute measurement uncertainties.
	0.1 g/kg to < 1.0 g/kg		3.2 mg/kg to 6.3 mg/kg	
	1,0 g/kg to < 10 g/kg		6.3 mg/kg to 33 mg/kg	
	10 g/kg to 52 g/kg		33 mg/kg to 0,25 g/kg	
	1.0 g/kg to 160 g/kg	KF volumetry Inhouse procedure according SOP 20404233, Version 2/2020	12 mg/kg to 2.0 g/kg	
	5 % to 16 %	Loss on drying (temperature: 150°C) Inhouse procedure according SOP 20404233, Version 2/2020	0.01 % to 0.05 %	
Mass fraction of elements in standard solutions	9 mg/kg to 10500 mg/kg	inductively coupled plasma optical emission spectrometry ICP-OES Inhouse procedure according SOP 20120939, Version 3/2020	0.3 % to 0.8 %	Specified are the relative measurement uncertainties These depend on the deployed primary Reference material.
Mass fraction of elements in standard solutions	9 mg/L to 10500 mg/L		0.3 % to 0.8 %	

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Calibration and Measurement Capabilities (CMC)

Measured quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement	Remarks
Mass concentration of elements in multi standard solutions	0.9 µg/kg to 10500 µg/kg	inductively coupled plasma optical emission spectrometry ICP-OES Inhouse procedure according SOP 20689681, Version 1/2022	0.1 % to 32 %	Specified are the relative measurement uncertainties These depend on the deployed primary Reference material.
Mass concentration of elements in multi standard solutions	0.9 µg/L to 10500 µg/L		0.1 % to 32 %	

Abbreviations used:

CMC	Calibration and measurement capabilities (Kalibrier- und Messmöglichkeiten)
SOP	Standard Operating Procedure

Rücksendevordruck
für Ihre ungültige Urkunde

DAkkS
Deutsche
Akkreditierungsstelle

Deutsche
Akkreditierungsstelle GmbH
Standort Braunschweig

Kontaktdaten und Verfahrensnummer finden Sie in Ihrem aktuellen Bescheid.

Deutsche Akkreditierungsstelle GmbH
Abteilung Metrologie
Bundesallee 100
38116 Braunschweig

07.02.2023

Rücksendung der ungültig gewordenen Urkunde inkl. Urkundenanlage

Sehr geehrte Damen und Herren,

mit heutiger Post haben Sie Ihren aktuellen Akkreditierungsbescheid sowie Ihre aktuelle Akkreditierungsurkunde inkl. deren Anlage(n) erhalten.

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- **Bitte senden Sie keine Bescheide an uns zurück – diese gelten nicht als Anlage zur Urkunde und verbleiben bei Ihnen.**

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☐ **Die ungültige Urkunde und Anlage kann durch die DAkkS vernichtet werden**

☐ **Die ungültig markierte Urkunde und Anlage soll uns zurückgesandt werden (kostenpflichtig)**

Wir danken Ihnen für Ihre Unterstützung.

Mit freundlichen Grüßen

Ihre Deutsche Akkreditierungsstelle

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