

Deutsche Akkreditierungsstelle GmbH

Entrusted according to Section 8 subsection 1 AkkStelleG in connection with Section 1 subsection 1 AkkStelleGBV

Accreditation



The Deutsche Akkreditierungsstelle GmbH attests that the reference material producer

MERCK Kommanditgesellschaft auf Aktien
Life Science
Frankfurter Straße 250, 64293 Darmstadt

is competent under the terms of DIN EN ISO 17034:2017 to produce reference materials in the area:

production of certified reference materials in the fields conductivity standard solutions, element standard solutions, pH-reference solids and pH-reference solutions, water standards and titrimetric standards

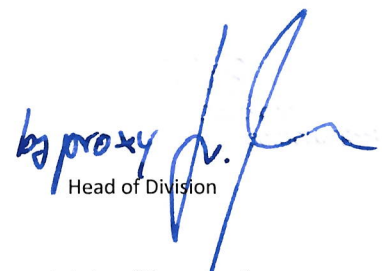
The accreditation certificate shall only apply in connection with the notice of accreditation of 03.06.2019 with the accreditation number D-RM-15185-01. It comprises the cover sheet, the reverse side of the cover sheet and the following annex with a total of 2 pages.

Registration number of the certificate: **D-RM-15185-01-00**

Berlin,
03.06.2019

Dipl.-Ing. Andrea Valbuena
Head of Division

Translation issued:
03.06.2019


Head of Division

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>

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

See notes overleaf.

Deutsche Akkreditierungsstelle GmbH

Annex to the Accreditation Certificate D-RM-15185-01-00 according to DIN EN ISO 17034:2017

Valid from: 03.06.2019

Date of issue: 21.06.2019

Holder of certificate:

**MERCK Kommanditgesellschaft auf Aktien
Life Science
Frankfurter Straße 250, 64293 Darmstadt**

Reference material production in the fields:

production of certified reference materials in the fields conductivity standard solutions, element standard solutions, pH-reference solids and pH-reference solutions, water standards and titrimetric standards

The reference material producer maintains an up-to-date list of certified reference materials in the accredited area

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

Abbreviations used: see last page

*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>*

Annex to the accreditation certificate D-RM-15185-01-00

Certified reference materials in the fields conductivity standard solutions, element standard solutions, pH-reference solids and pH-reference solutions, water standards and titrimetric standards

Product	Measured quantity / Calibration item	Measuring range / margin	1. Characterization strategy/ 2. procedure
Conductivity standard solutions	Electrolytic conductivity	1 mS m ⁻¹ to < 12000 mS m ⁻¹	1. Value transfer from an RM to a closely matched candidate RM performed using a single measurement procedure performed by one laboratory. /2. Conductivity meter with 4-electrode cells
Element standard solutions	Mass fraction of an element	1 mg/kg to 20000 mg/kg	1. Value transfer from an RM to a closely matched candidate RM performed using a single measurement procedure performed by one laboratory. /2. Inductively coupled plasma optical emission spectrometry ICP-OES
pH-reference solids	pH-value	1 to 11	1. Value transfer from an RM to a closely matched candidate RM performed using a single measurement procedure performed by one laboratory. /2. Differential potentiometry
pH-reference solutions	pH-value	1 to 11	1. Value transfer from an RM to a closely matched candidate RM performed using a single measurement procedure performed by one laboratory. /2. Differential potentiometry
		0 to 14	1. Value transfer from an RM to a closely matched candidate RM performed using a single measurement procedure performed by one laboratory. /2. Multi-point calibration with glass electrode
titrimetric standards	Mass fraction of titrimetric standards	95,00 – 101,00 %	1. Value transfer from an RM to a closely matched candidate RM performed using a single measurement procedure performed by one laboratory. /2. Titrimetry (Acidimetry, Alkalimetry, Argentometry, Complexometry, Redox titration, Iodometry)
water standards/ titrimetric standards	Water mass fraction of Water standards/ titrimetric standards	15 mg/kg - 52 g/kg	1. Using a single reference measurement procedure in a single laboratory. /2. KF Coulometry (direct measurement and KF oven technology)
		1,0 g/kg - 160 g/kg	1. Using a single reference measurement procedure in a single laboratory. /2. KF-Volumetry
		5 % - 16 %	1. Using a single reference measurement procedure in a single laboratory. /2. Loss on drying (150°C)

Abbreviations used:

DIN	Deutsches Institut für Normung e.V.
EN	European Standard
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
KF	Karl Fischer