

Deutsche Akkreditierungsstelle GmbH

Annex to the Accreditation Certificate D-RM-20519-01-00 according to ISO Guide 34:2009 and DIN EN ISO/IEC 17025:2005

Period of validity: 09.06.2016 to 08.12.2019

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Holder of certificate:

Honeywell Specialty Chemicals Seelze GmbH
Technical Service HYDRANAL
Wunstorfer Straße 40, 30926 Seelze

Production of reference materials in the fields:

certified reference materials in the form of liquid and solid water standards for the Karl-Fischer-Titration

Abbreviations used: see last page

Product	Measured quantity	Measuring range	Relative uncertainty ¹⁾	Standard methods for the determination of the reference values
Liquid water standards matrix: organic solvents or mixtures	mass fraction water	0,08 - 0,5 mg/g	1 %	coulometric Karl Fischer Titration
		0,5 - 5,0 mg/g	0,1 %	coulometric Karl Fischer Titration
		8,0 - 12,0 mg/g	0,4 %	volumetric Karl Fischer Titration
Solid water standards matrix: organic pure substances or mixtures	mass fraction water	10 - 200 mg/g	0,4 %	volumetric Karl Fischer Titration

¹⁾ Expanded combined uncertainties are given with a confidence interval of 95 % and the coverage factor k = 2.

The determination of the reference values based on the following test methods:

1 Determination of the water content in organic and inorganic liquids, solids and Karl-Fischer-Reagents by Karl-Fischer-Titration

ISO 760 1978-12	Determination of water; Karl Fischer method (General method)
ASTM E 203 2008	Standard Test Method for Water Using Volumetric Karl Fischer Titration
DIN 51777-1 1983-03	Testing of mineraloil hydrocarbons and solvents; determination of water content according to Karl Fischer; direct method
DIN 51777-2 1974-09	Testing of Mineral Oil Hydrocarbons and Solvents; Determination of Water Content according to Karl Fischer; Indirect Method
Ph. Eur. chapter 2.5.32	micro determination of water – coulometric titration
Ph. Eur. chapter 2.5.12	Semi-micro determination of water – volumetric titration
Test method 01 Technical Service HYDRANAL 27.05.2014	Determination of water content in liquids and solids using volumetric Karl-Fischer-Titration
Test method 02 Technical Service HYDRANAL 09.04.2014	Determination of water content in liquids and solids using coulometric Karl-Fischer-Titration
Test method 03 Technical Service HYDRANAL 09.04.2014	Determination of water content in liquids and solids using indirect Karl-Fischer-oven method

2 Determination of physical characteristics using gravimetric methods

Ph. Eur. chapter 2.2.32	Loss on drying
Test method 04 Technical Service HYDRANAL 28.08.2009	Determination of water content in organic and inorganic solids by Loss on drying

Abbreviations used:

ASTM	Standard Methods, American Society for Testing and materials
DIN EN	German takeover of European Standard
DIN	Deutsche Institut für Normung e. V.
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
KF	Karl Fischer
Ph. Eur.	European Pharmacopoeia