Certificate of Analysis

Certified reference buffer solution
CPY20-E, type: pH(S) = 7.00

issued by Manufacturer:

Endress+Hauser Conducta GmbH+Co.KG
CRM-Manufacturing
Landsberger Str. 28, 04736 Waldheim
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Endress+Hauser
People for Process Automation

DAkkS
Deutsche Akkreditierungsstelle
D-RM-15193-01-00

accredited by the German accreditation authority DAkkS as registered reference material producer D-RM-15193-01-00 according to DIN EN ISO 17034:2017.

Object	**Certified pH value buffer solution**
Type	**7.00**
Lot no.	**96059807**
Certified value	**6.97 ± 0.02 (25 °C)**
Date of calibration	**2026-01-12**
Order code	**CPY20-E**C***
Intended use	This reference material is intended for use as a calibration standard for pH instruments or pH electrodes.
Shelf life, unopened container	**12 months**
Storage	Store in unopened container in normal atmospheric conditions at a temperature between 15 and 25 °C. Do not expose to light.
Instruction for handling and correct use	The pH value strongly depends on the temperature. Therefore, it is necessary to keep the temperature constant during the measurement. Details concerning the nature of any hazard and appropriate precautions are provided in the material safety data sheet. Use only fresh reference material, minimal volume to be used: 10 ml.

Date	17.02.2026	
Certificate version	1	
Peggy Krems Technische Verantwortliche		Operator
Peggy Krems Technische Verantwortliche		Approving Person

Description of the certified reference material	Buffer solution pH 7 contains 0.05 mol disodium hydrogen phosphate, 0.05 mol potassium dihydrogen phosphate and 0.5 mol potassium chloride per liter. The pH is adjusted with 2 mol/l sodium hydroxide solution to an accuracy of ± 0.02 pH.
Measuring method	The characteristic is ensured by multiple point calibration using a glass electrode measuring system thermostated at (25 ± 0.05) °C. The glass electrode measuring system is calibrated using 5 reference buffer solutions and the calibration function is determined. Based on the calibration function and a measured value within the sample the pH-value is calculated. The buffer solutions have been traceable to primary reference material of PTB and to standard reference material of NIST.
Metrological traceability	Calibration at 25°C with Certified Reference Material from ZMK Wolfen (D-RM-15186-01-00) Certificate No. 10-4171 / Batch 06/25; 10-4141 / Batch 17/25; 10-4162 / Batch 08/25; 10-4176 / Batch 07/25; 10-4173 / Batch 14/25
Characteristic and value	pH-value 6.97±0.02 (according to DIN EN ISO 17034:2017)
Uncertainty of CRM	Reported is the expanded uncertainty which results from the standard uncertainty by multiplication with the coverage factor k = 2. It has been calculated according to EA-4/02 M:2022. The value of the measurand is found within the attributed interval with a probability of approximately 95 %. u_{CRM} is calculated by given equation according to ISO 33405:2024 from uncertainty of characterization, uncertainty of homogeneity and uncertainty of stability. $$u_{CRM} = \sqrt{u^2_{Characterisation} + u^2_{Homogeneity} + u^2_{Stability}}$$
Uncertainty of characterization	Is the uncertainty in accordance with DIN EN ISO/IEC 17025:2018 which includes the contributions of the primary reference material and the measuring system. The characterization measurements have been conducted by our DAkkS accredited calibration laboratory.
Uncertainty of Homogeneity	Is the between-bottle and in-bottle variation in accordance with ISO 33405:2024. The assessment of homogeneity is performed by analysis of a representative number of systematically chosen sample units from each production and filing charge as well as from one representative large container.
Uncertainty of Stability	Is the uncertainty obtained from long-term stability and transport stability in accordance with ISO 33405:2024. The stability studies are conducted with each production and filling unit and are the basis for the quantification of the expiry date of the reference material for the unopened bottle. The transport stability is evaluated once from exemplary international transports and transport simulations.