SRD

R-0003

CERTIFICATE OF ANALYSIS

pH Standard Solution
Certified Reference Material
ISO 17034:2016

Sample COA

Product Description:

Table-1

Version No.: 00	**Certificate No:** SRD/CRM/P-002/26/001
Lot No.: CRM/P/002/1	**Catalogue Number**: CRM/P-02
Issue Date: 31/08/2026	**Quantity: 100 mL**
Manufacturing Date: Aug 2026	**Expiry Date: July 2028**

This CRM of pH standard solution is produced by SabihaResearch and Development Limited RMPDivision Accredited as per ISO/IEC 17034: 2016 The CRM pHstandard solution is prepared using high purity potassium chloride, sodium hydroxide pelletsas starting material and grade-1 water having conductivity <0.1 µS/cm. one unit of this CRM consists of 100 ml pH standard solution packed in white HDPE bottle. The pH value of pH standard solution was certified and traceable to SI Unit using pH along with the associated uncertainty was calculated at 95 % confidence level with coverage factor k=2, considering major sources of uncertainty including measurements replication, instrument background, possible heterogeneity and stability factor according to ISO guide 35:2017[5], ISO 33405:2024[2] as given in the Table-2

Certified Value and Expanded Uncertainty:

Table-2

Sr. No	Measurand/constituent	Certified Value	Expanded Uncertainty (k=2)
1.	(at 25◦ C)	pH 4.0	± 0.05

Metrological Traceability

This CRM is metrologically traceable to SI Units through closely matched candidate RM. All measurements are performed in compliance of ISO/IEC 17025:2017 through an unbroken chain of comparison having stated measurement uncertainty.

Homogeneity:

Ten bottles of this certified reference material selected and homogeneity assessment was carried out within and between the bottles as per ISO Guide 33405:2024 [2].

Intended Use:

It is intended to be used as certified reference material for calibration of pH meter instruments and validation of standard methods for determination of pH value.

Instruction for Storage, Usage and Precautions for handling and use:

This certified reference material should be stored in tightly sealed original bottle between 5-30° C and should be protected from light. After use the bottle should be sealed tightly again and to be stored at reduced temperature. This CRM can be opened under normal laboratory condition as per standard method.

i) The sampling should be done using clean and dry pipette/micropipette.
ii) Excess sample must be rejected and must not be put back into the original bottle.
iii) Gloves, masks, goggles and other general precautionary measure should be used while handling the sample.

Associated uncertainty:

The associated uncertainty U_{CRM} reported with the certified values is calculated as combined expanded uncertainty UCRM=k.U_{CRM} in accordance with ISO 33405:2024 with k=2 as the coverage factor for a 95 % coverage probability.

The combined uncertainty Ucrm is derived for combination of the squared uncertainty contribution:

$$U_{CRM} = \sqrt{U^2_{\text{Charaterisation}} + U^2_{\text{Homogeneity}} + U^2_{\text{Stability}}}$$

Validity

The Validity of this CRM is no longer than one year from the date of opening, within the period of expiry date mentioned in the certificate Table-1.

Disclaimer:

Development of this CRM has been carried out at Sabiha Research and Development Ltd., Derabassi Punjab Accreditation as per ISO 17034: 2016[1] and testing is performed with compliance as per ISO/IEC 17025:2017[3]. The certification of this CRM is done complying with the requirements of ISO guide 33405:2024[2]. However, it assumes no liability with respect to or for damages resulting from, the misuse of any information, material, apparatus, method or process disclosed in this certificate or any warranties with respect to material safety. The certified values of the parameters given in this certificate are the best estimates of true value within with stated uncertainties.

References:

1. ISO 17034:2016-General Requirements for the competence of reference material produces.
2. ISO Guide 33405:2024- Reference materials- Approaches for characterization and assessment of homogeneity and stability.

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3. ISO/IEC 17025:2017- General requirements for the competence of testing and calibration laboratories.

Safety Information

Refer to the material safety data sheet.

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Approving Officer

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Sample COA