aQcrm®
Aashvi Technology LLP

भारतीय निर्देशक द्रव्य

INDIAN REFERENCE MATERIAL

(BHARATIYA NIRDESHAK DRAVYA, BND)

BND Certificate

BND® 1007

pH BUFFER SOLUTION

(Chemical Parameter)

Certificate Number: BND®1007/ATL22050216

This Bharatiya Nirdeshak Dravya, BND®1007, an Indian Certified Reference Material of pH buffer solution is produced by Aashvi Technology LLP. It is intended to be used as a calibration standard for pH instruments and validation of method for the determination of the pH value. The pH Buffer Solution is prepared using high purity Boric acid, Potassium chloride and Sodium hydroxide as starting material. One unit of BND consists of 500 ml of pH Buffer solution packed in white HDPE bottles and then sealed in an aluminized bag. The pH value of the Buffer solution was certified & traceable to SI unit using glass electrode pH meter. The certified value is assigned by Aashvi Technology LLP and further ascertained by CSIR-National Physical Laboratory, New Delhi, the National Measurement Institute (NMI) of India. Certified value of pH along with the associated uncertainty was calculated at 95% confidence level with coverage factor k=2, considering major sources of uncertainty including measurement replication, instrument background, possible heterogeneity and stability factors according to ISO GUM Guide 100:2008 [1] and ISO Guide 35:2017 [2] as given in Table-1.

Certified Value:

MEASURAND/CONSTITUENT	CERTIFIED VALUE	EXPANDED UNCERTAINTY, k=2
pH (at 25 °C)	9.00	± 0.05

Traceability: The BND®1007 is prepared gravimetrically, metrologically traceable to SI unit through secondary glass electrode and validated by CSIR-National Physical Laboratory (NMI of India). All measurements have been carried out to establish traceability through an unbroken chain of comparisons, having stated measurement uncertainty.

Nature of Material : Refer to MSDS

Homogeneity: Ten bottles of BND®1007 were selected and homogeneity assessment was carried out within and between these bottles as per ISO Guide 35[2].

Instruction of Storage, Commutability, Precautions and Use for Handling: The BND® 1007 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 stored at reduced temperature (e.g. refrigerator) to minimize transpiration rate. The BND® can be opened under normal laboratory condition. Excess sample must be rejected and must not be put back into the BND® bottle. Gloves, masks, goggles and other general precautionary measures should be used while handling the sample.

Expiration of Certification: The certification of BND®1007 for batch No. **ATL22050216** is valid, within the measurement uncertainty specified, until **March 16, 2024** provided the BND is handled

and stored in accordance with the instructions given in this certificate. This certification is nullified if the BND is damaged, contaminated or otherwise modified.

Maintenance of Certification: Aashvi Technology LLP will monitor the certified values of BND®1007 over the period of its certification. If substantial technical changes occur that affect the certification before the expiration of this certificate, Aashvi Technology LLP will notify the purchaser.

Disclaimer: Development of BND®1007 has been carried out at Aashvi Technology LLP, Ahmedabad accredited as per ISO 17034:2016 [3] and testing is performed with compliance as per ISO/IEC 17025:2017 [4]. The certification of the BND® 1007 is done complying to the requirements of ISO Guide 31:2015 [5]. 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 the stated uncertainties.

Temperature dependence information:

Temperature (°C)	ΔpH	Temperature (°C)	ΔpH
5	+ 0.20	30	- 0.08
10	+ 0.12	35	- 0.13
15	+ 0.07	40	- 0.16
20	+ 0.03	50	- 0.22

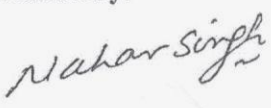
References:

1. JCGM 100:2008 - Evaluation of measurement data- Guide to the expression of uncertainty in measurement.
2. ISO Guide 35:2017 - Reference Materials - Guidance for characterization and assessment of homogeneity and stability.
3. ISO 17034:2016 - General Requirements for the competence of Reference Material Producers.
4. ISO/IEC 17025:2017 - General requirements for the competence of testing and calibration laboratories.
5. ISO Guide 31:2015 - Reference Materials - Contents of certificate, labels and accompanying documentation.

Certificate Issue Date: 17/03/2022

Document Version: BND®/CSIR-NPL/ATL/2022/ATL22050216

Certificate issued by:



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Mr. Priyesh Amin
(Authorized Signatory)
Director
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- In case of any query regarding this BND please contact: Head, BND Division (headbnd@nplindia.org), CSIR-NPL, New Delhi-110012.
- This certificate shall not be reproduced without written approval from CSIR-NPL, New Delhi.
- Responsibility for issue and release of this certificate lie with Aashvi Technology LLP, Ahmedabad.

For further information, please contact: Aashvi Technology LLP (Producer of aQcrm), [Accredited as per ISO 17034: 2016 by QCI-NABL, India vide Certificate No. RC-1008] E-14, New Madhavpura Market, Shahibaug, Ahmedabad-380004, Gujarat (India) Tel: +91- 9974145050 E: info@aashvitechnology.com, W: www.aashvitechnology.com