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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 20245.2-2013

**Expression of performance of electrochemical analyzers -- Part
2: pH value**

电化学分析器性能表示 第2部分：pH值
(English Translation)

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Table of Contents

- Foreword
- 1 Scope
- 2 Normative references
- 3 Terms, definitions and symbols
- 3.1 Terms and Definitions

Foreword

GB/T 20245 "performance of electrochemical analyzers" is divided into the following five sections.

--- Part 1. General;

Part --- Article 2. pH value;

--- Part 3. electrolyte conductivity;

--- Part 4. using coated current sensor measurement of dissolved oxygen;

--- Part 5. redox potential.

This section GB/T 20245 Part 2.

This section drafted in accordance with the rules of GB/T 1.1-2009 and GB/T 20000.2-2009 given.

This section uses the translation method is equivalent to using IEC 60746-2:2003 "performance of electrochemical analyzers - Part 2. pH value." Consistency correspondence between this part of international documents and normative references of our files are as follows.

--- GB/T 19001-2008 quality management system requirements (ISO 9001:2008, IDT) for ease of use, this section made the following editorial changes.

--- GB/T 20245.2 standard text used in "this part of GB/T 20245 of" instead of "IEC 60746 Part of the present";

--- Decimal symbol used in place of ",", ". ", ";

--- Included IEC 60746-2 errata Errata 1 and 2 content;

--- Remove the foreword to international standards.

Please note that some of the content of this document may involve patents. Release

mechanism of the present document does not assume responsibility for the identification of these patents.

This part is proposed by China Machinery Industry Federation.

This part of the measurement and control of Standardization Technical Committee (SAC/TC124) is administered by the National industrial processes.

This section drafted by. China Instrument Industry Association, Shanghai Electronics Scientific Instrument Co., Ltd., China Institute of Metrology, Sichuan-Chongqing Analytical Instruments Co., FPI (Hangzhou) Co., Ltd. Hailei magnetic sensor, meter Shanghai Technology Research Institute to test the amount of Beijing Institute of Metrology detection, Beijing Institute for the Analysis instruments.

1 Scope

GB/T 20245 purpose of this section is.

- Manufacturer specifies the terms described for the determination of pH of aqueous solutions analyzer, sensor unit and electronic unit, definitions and Claim;
- Establishment of such a performance test analyzer, sensor unit and electronic unit;
- Provide basic document for the ISO 9001, ISO 9002 and ISO 9003 quality management standard applications.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

GB/T 20245.1-2006 performance of electrochemical analyzers represent - Part 1. General (IEC 60746.1:2003, IDT) ISO 9001 quality management system requirements (Qualitymanagementsystems-Requirements) Quality assurance model ISO 9002 quality system of production, installation and service (Qualitysystems-Modelforquality assuranceinproduction, instalationandservicing) ISO 9003 quality system for final inspection and test quality assurance model (Qualitysystems-Modelforquality assuranceinfinalinspectionandtest)

3.1 Terms and Definitions

GB/T 20245.1-2006 and as defined in the following terms, definitions and symbols apply to this document.

3.1.1

pH value pHvalue

AlphaH used to describe the activity of hydrogen ions in aqueous solution, with the following formula.

$$\text{pH} = -\lg \alpha_{\text{H}}$$

pH is a pH value using a known standard buffer solution, the test sample is subjected to force E between the electrodes by measuring immersion measured. Battery schematic view.

Reference pH electrode sample electrode E in the standard buffer solution pH (S1), and with the same pair of electrodes at the same temperature, measured in accordance with the following figure.

Reference electrode buffer solution (S1) than the pH electrode E (S1) Electromotive force difference E (S1) is defined as the potential of the right side (pH electrode) minus the left side (reference electrode) of potential.

Then the ideal pH value of the sample according to formula (1).

$$\text{pH} = \text{pH}(\text{S1}) - E$$