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

GB/T 20245.5-2013

**Expression of performance of electrochemical analyzers -- Part
5: Oxidation-reduction potential or redox potential**

电化学分析器性能表示 第5部分：氧化还原电位

(English Translation)

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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 5.

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 60746-5:1992 "performance of electrochemical analyzers - Part 5. redox Potential. " for ease of use, this section made the following editorial changes.

--- GB/T 20245.5 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 ",", ". ", ";

--- 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, Sichuan-Chongqing Analytical Instruments Co., Ltd., Shanghai Electronics Shares have scientific instruments Limited, China Institute of Metrology, Hailei magnetic sensor Technology Co., Ltd., Shanghai Measurement and Testing Technology Research Institute, Beijing metering Detection Research Institute, Hangzhou condensing Environmental Protection Technology Co., Beijing Analytical Instrument Institute.

1 Scope

This section GB/T 20245 specifies the manufacturer describes an aqueous solution for the determination of the value of the oxidation-reduction potential analyzer, sensor unit the term elements and electronic units, definitions and requirements, as well as the performance of such test analyzer, sensor unit and electronic unit.

This section applies to an inert conductive electrode measured oxidation reduction potential value of an aqueous solution of analyzers, sensors and electronic units.

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)

3.1 Symbol

The following symbols apply to this document.

α_{red} --- reducing ion activity α_{ox} --- oxidant ion activity E --- emf temperature of the sample at t E^0 --- oxidized and reduced state ion activity ratio of 1.00, the redox potential of the standard F --- Faraday constant, $96493.1 \text{ C} \cdot \text{mol}^{-1}$ n --- the number of electrons involved in the redox process m --- the number of protons involved in the redox process R --- molar gas constant, $8.3145 \text{ J} \cdot \text{mol}^{-1} \cdot \text{K}^{-1}$ Celsius temperature t --- T --- thermodynamic temperature of the sample, the test solution and sensors ($T = t + 273.15$)

3.2 Terms and Definitions

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

3.2.1

Redox systems redoxsystem Redox systems by a given solution oxidized and reduced form of ions, only when the solution of the pros and cons of both ions by electron Into each other and reach equilibrium when the system was present.

Such as Fe³/Fe² redox system formed, see equation (1).

