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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 6147-2025

Replacing GB/T 6147-2005

Test method for thermoelectric power of precision resistance alloys

精密电阻合金热电动势率测试方法

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Table of Contents

Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting is required.

This document replaces GB/T 6147-2005 "Test method for thermal electromotive force rate of precision resistance alloys" and is consistent with GB/T 6147-2005.

In addition to structural adjustments and editorial changes, the main technical changes are as follows.

Added a summary of methods (see Chapter 4); a) The test equipment requirements have been changed (see Chapter 5, Chapter 5 of the 2005 edition); b) The sample requirements

have been changed (see 6.1, 4.1 of the 2005 edition); c) The temperature change requirements of the thermostatic bath in the test method have been changed (see 8.4, 7.4 of the 2005 edition); d) Added polarity determination rules (see 9.4). e) Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

This document was proposed by the China Machinery Industry Federation.

This document is under the jurisdiction of the National Technical Committee for Standardization of Instrument Functional Materials (SAC/TC 419).

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The previous versions of this document and the documents it replaces are as follows.

First published in 1985 as GB/T 6147-1985, first revised in 2005; - This is the second revision. - Precision resistance alloy thermal electromotive force rate test method

1 Scope

This document describes the test method for the thermal electromotive force rate of precision resistance alloys, including the principle, test device, specimen and preparation, test environment, environment, test procedures, data handling, precision and accuracy, and test reporting.

This document is applicable to the test of the thermal electromotive force rate of precision resistance alloys within the range of -65 °C to 250 °C. Other metal materials are The test of thermal electromotive force rate within the range is performed as reference.

2 Normative references

GB/T 2903

3 Terms and definitions

The terms and definitions defined in JB/T 6819.2 and JB/T 6819.3 and the following apply to this document.

3.1 Thermoelectric power

Assuming that the thermoelectric potential is linearly related to temperature, the thermoelectric potential generated for every 1°C temperature difference.

4 Principle

The sample is paired with a standard electrode (platinum wire or copper wire) to form a thermocouple. The thermal electric field generated by each 1°C change in temperature between (t~t0) is Potential is the thermoelectric potential ratio of the alloy to platinum (or to copper).

5.1 Composition

The test device is mainly composed of standard thermometer, electric measuring instrument, switch, constant temperature bath, ice point thermostat and standard electrode.

The schematic diagram of the device is shown in Figure 1.