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

GB/T 18034-2023

Replacing GB/T 18034-2000

**Specification for the platinum rhodium thermocouple thin wires
used in rapid temperature measuring thermocouple**

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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: This document replaces GB/T 18034-2000 "Specification for Platinum-rhodium Fine Wires for Miniature Thermocouples": Compared with GB/T 18034-2000, except Apart from structural adjustments and editorial changes, the main technical changes are as follows:

- a) Changed the scope of application of the standard (see Chapter 1, Chapter 1 of the:2000 edition);
- b) The original definition of terms in the original document was deleted, and the definitions of "rapid temperature measuring thermocouple" and "palladium point" were added (see Chapter 3, Chapter 3 of the:2000 edition);
- c) Two supply states of dual wire M and Y2 are added (see 4:1:2);
- d) The allowable deviation, out-of-roundness, surface roughness and minimum weight of a single pair of wires with different diameters have been changed (see 5:1, 5:3 of the:2000 edition);
- e) Changed the allowable deviation range of uneven thermal electromotive force (see 5:4, 5:6 of the:2000 edition);
- f) Deleted the B-type temperature measurement category III level in the product classification (see 5:7 of the:2000 edition);
- g) The thermal electromotive force of the gold point (1064:18°C) in the thermal electromotive force and allowable error has been deleted (see 5:7 of the:2000 edition);
- h) The test method for the surface quality of even wires has been changed (see 6:3, 6:3:1 of the:2000 edition);
- i) Added the test method of platinum even wire purity homonymous pole comparison method (see 6:3): Please note that some contents of this document may refer to patents:

The issuing agency of this document assumes no responsibility for identifying patents: This document is proposed by China Nonferrous Metals Industry Association: This document is under the jurisdiction of the National Nonferrous Metals Standardization Technical Committee (SAC/TC243): This document is drafted by: Guiyan Platinum Co., Ltd., Intepa Platinum Co., Ltd., Shenzhen Zhongjin Lingnan Nonferrous Metals Co., Ltd. Co., Ltd., Nonferrous Metal Technology and Economic Research Institute Co., Ltd., Chongqing Materials Research Institute Co., Ltd: The main drafters of this document: Feng Yan, Zhou Yinghui, Zhu Wuxun, Wu Fei, Xiang Lei, Wu Baoan, Deng Chenglei, Tang Huiyi, Zhang Rong, Yin Keqin, Zhang Xiaobo, He Lunying, Yang Zhixian, Zuo Hongyi, Yang Ping: This document was first published in:2000, and this is the first revision: Specification for platinum-rhodium fine wire for rapid temperature measurement thermocouple Caution

--- Personnel using this document should have practical experience in formal laboratory work: This document does not address all possible security issues question: It is the user's responsibility to take appropriate safety and health measures and ensure compliance with the conditions stipulated in relevant national regulations:

1 Scope

GB/T 18034-2023 is the Chinese national standard on specification for the platinum rhodium thermocouple thin wires used in rapid temperature measuring thermocouple, in the field of metallurgy. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 23 May 2023 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 December 2023. Classification: ICS 77.150.99, CCS H68. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document specifies the classification and marking, technical requirements, inspection methods, inspection rules, marks, Packaging, transportation, storage and accompanying documents and order form content: This document is applicable to the manufacture of platinum-rhodium 10-platinum (type S), platinum-rhodium 13-platinum (type R) and platinum-rhodium 30-platinum-rhodium 6 (type B) and other graduated thermocouples Platinum rhodium fine wire (hereinafter referred to as "wire") products:

2 Normative references

The contents of the following documents constitute the essential provisions of this document through normative references in the text: Among them, dated references For documents, only the version corresponding to the date is applicable to this document; for

undated reference documents, the latest version (including all amendments) is applicable to this document:

GB/T 5977 Platinum wire for resistance thermometers

GB/T 8170 Numerical rounding off rules and expression and determination of limit values

GB/T 15077 Geometric Dimensions Measurement Methods of Precious Metals and Their Alloys

GB/T 16701 Measurement method of thermal electromotive force of precious metal and base metal thermocouple wire

GB/T 18036 Measurement method of thermal electromotive force of platinum rhodium thermocouple filament JB/T 6819:

3 Terms and Definitions

The following terms and definitions defined in JB/T 6819:2 apply to this document: 3:

1 Consumable thermocouples for measuring the temperature of molten steel and high-temperature molten metal:

Note: Even wires are divided into two categories: measuring temperature and determining carbon: Temperature-measuring dual wires are used to quickly measure the real-time temperature of molten steel and high-temperature molten metal; Measure the real-time temperature of molten steel and high-temperature molten metal to reflect the carbon content inside: 3:2 palladium point palladium point The temperature point at which a palladium fuse with a purity of not less than 99:99% melts:

4 Classification and labeling

1 Classification of even wires 4:1:

1 Calibration number (type), name, polarity and nominal chemical composition of even wire The graduation number (model), name, polarity and nominal chemical composition of the even wire shall comply with the provisions in Table 1: