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

GB/T 36010-2018

**Platinum-40% rhodium / platinum-20% rhodium thermocouple
wires and temperature-EMF tables**

铂铑40-铂铑20热电偶丝及分度表

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009. This standard is proposed by China Machinery Industry Federation. This standard is under the jurisdiction of the National Instrument Functional Material Standardization Technical Committee (SAC/TC419). This standard is drafted by: Chongqing Material Research Institute Co., Ltd. Participated in the drafting of this standard. Dongguan Superior Testing Technology Service Co., Ltd., Wuxi Yingtiao Metal Products Co., Ltd. Haipang Lande Precious Metals Co., Ltd., China Aviation Industry Corporation Beijing Great Wall Metrology and Measurement Technology Research Institute, Anhui Lande Group Co., Ltd. Limited company, Zibo Feiyan Advance Measurement and Control Technology Co., Ltd., Zhejiang Lent Electromechanical Co., Ltd., Zhejiang Taisuo Technology Co., Ltd. The main drafters of this standard. Liu Qingbin, Wu Baoan, Yan Rongji, Yan Lixin, He Lunying, Tang Huiyi, Yin Keqin, Xue Zhenghui, Lu Guoyi, Yin Chenglou, Zhou Xiucheng, Wu Jialun, Lu Hao, Zhang Chi. Platinum crucible 40-platinum rhodium 20 thermocouple wire and indexing table

1 Scope

China's national standard for type B thermocouple wire and its temperature to electromotive force tables. It specifies the product classification, the technical requirements, the test methods, the inspection rules, the supply methods and the packaging. This is the highest temperature thermocouple in general industrial use, working to around 1700 degrees C, and its composition explains where it is used: both legs are platinum-rhodium alloys, differing only in the rhodium content, which makes the assembly resistant to the oxidising atmospheres of glass tanks, steel ladles, ceramic kilns and sapphire growth furnaces. It has one peculiarity that the tables record and that engineers rely on: because both legs are so similar, the output near room temperature is almost zero, and below about fifty degrees C it is ambiguous. That is not a defect. It means a type B thermocouple needs no cold junction compensation - the reference end can sit anywhere near ambient and contribute nothing measurable.

This standard stipulates the product classification, technical requirements, test methods,

inspection rules, supply methods, and packages for platinum-germanium 40-platinum-rhodium 20 thermocouple wires. Equipment and signs. This standard applies to platinum rhodium 40-platinum rhodium 20 thermocouple wire (hereinafter referred to as "even wire").

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article. For undated references, the latest version (including all amendments) applies to this document.

GB/T 16701-2010 Method for measuring thermoelectromotive force of precious metal and cheap metal thermocouple wire

3 Product Categories

3.1 Product Name and Nominal Chemical Composition The product name and nominal chemical composition are shown in Table 1. See Appendix A for other physical performance parameters. Table

1 Product Name and Nominal Chemical Composition Product name polarity Nominal chemical composition (mass fraction) Pt Rh Platinum crucible 40 alloy wire positive electrode 60

40 Platinum crucible 20 alloy wire cathode 80 20

3.2 Recommended temperature limit for even wire The recommended temperature limit for the twin wire is shown in Table 2. Table 2 recommended temperature limit Wire diameter Mm product name Long-term use temperature limit Short-term use temperature limit

0.5 Platinum crucible 40- Platinum crucible

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3.3 Tag Examples The product's markup is in the following format. Platinum crucible 40 - platinum crucible 20 thermocouple wire GB/T 36010-0.5