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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 8320-2025

Replacing GB/T 8320-2017

Copper-tungsten and silver-tungsten electrical contacts

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work

Guidelines Part

1.Structure and Drafting Rules of Standardization Documents". Drafting. This document replaces GB/T 8320-2017 "Copper-Tungsten and Silver-Tungsten Electrical Contacts". Compared with GB/T 8320-2017, the main differences are structural adjustments and rewriting. Aside from the logical changes, the main technical changes are as follows:

---The symbols and annotations have been changed (see Chapter 4, Appendix A of the.2017 edition);

---The technical requirements have been revised, and the requirements for copper-tungsten and silver-tungsten electrical contacts have been separated (see Chapter 5, Chapter 4 of the.2017 edition);

---The detection rules have been changed (see Chapter 7, Chapter 6 in the.2017 edition);

---The normal inspection double sampling plan has been deleted (see Appendix C of the.2017 edition). Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents. This document was proposed by the China Electrical Equipment Industry Association. This document is under the jurisdiction of the National Technical Committee on Standardization of Electrical Alloys (SAC/TC228). This document was drafted by: China Electric Power Research Institute Co., Ltd., and Nanning branch of China Southern Power Grid Co., Ltd. Bureau, Suzhou Xierfu New Materials Co., Ltd., Xi'an University of Technology, Guilin Jinge Electrical and Electronic Materials Technology Co., Ltd., Henan Kefeng New Materials Co., Ltd., Guangxi Power Grid Co., Ltd. Electric Power Research Institute, Guilin Electrical Science Research Institute Co., Ltd., North China Electric Power University Xue, Shaanxi Srui New Materials Co., Ltd., Zhejiang Fuda Alloy Materials Technology Co., Ltd., Shanghai Siyuan High Voltage Switch Co., Ltd., Tianshui Xi'an Changcheng Alloy Co., Ltd., Wenzhou Hongfeng Electrical Alloy Co., Ltd., Shenyang Jinchang Lanyu New Material Co., Ltd., Wenzhou Ju Xing Technology Co., Ltd., Shandong Taikai High Voltage Switch Co., Ltd., Guizhou Zhongxi (Shanghai) New Material Technology Co., Ltd., Guangxi University Zhejiang Qiangli Electric Power Fittings Co., Ltd., State Grid Anhui Electric Power Research Institute, Pinggao Group Co., Ltd., Siemens Energy Yuan High Voltage Switch (Hangzhou) Co., Ltd., Zhejiang Naier Alloy Technology Co., Ltd., Xinzhou Shanghuayang Electrical Equipment Co., Ltd., Henan Mengyao Technology Co., Ltd. Technology Co., Ltd., Great Wall Electric Co., Ltd., Foshan Nop Materials Technology Co., Ltd., Hunan Huajing Powder Materials Co., Ltd. Xi'an Xi'an High Voltage Switchgear Operating Mechanism Co., Ltd., Ganzhou Guanghua Nonferrous Metals Co., Ltd., Jiangsu Meilin Copper Co., Ltd. Wenzhou Yinyu Alloy Co., Ltd. The main drafters of this document are. Ding Yi, Yang Zheng, Yang Yucai, Liang Shuhua, Han Yu, Qin Xiangzhong, Zhang Yan, Su Yi, Cui Defeng, Wang Jian, and Zhou Xing. Kong Xin, Wang Zhen, Ding Ning, Wu Xinhe, Yang Yongze, Huang Guanglin, Hou Lei, Jiang Yibin, Zhang Yiyi, Zhou Yunyun, Zhao Qian, Hao Liucheng, Ji Cundong, Chen Chun Li Gang, Zhang Xiaofeng, Chen Guanghua, Wang Yongye, Sun

Zhifang, Cao Weichan, He Xuewen, Zhai Jinyong, Zheng Caiwei, Liu Beiyang, Zhao Haorong, Liu Tan, Qin Yan Pang Zhen, Jin Yichen, Zhang Qiao, Ren Hanwen, Yan Peitao, Cui Bin. The release history of this document and the document it replaces is as follows:

---First published in 1987 as GB/T 8320-1987, revised for the first time in.2003, and revised for the second time in.2017;

---This is the third revision. Copper-tungsten and silver-tungsten electrical contacts

1 Scope

GB/T 8320-2025 is the Chinese national standard covering the contact material for arcing duty - the tungsten skeleton infiltrated with copper or silver, its density and hardness, its electrical conductivity, and the resistance to erosion and welding that decides how many operations a switch survives. Issued on 31 October 2025, it has been in force since 1 May 2026, replacing GB/T 8320-2017.

This document specifies the technical requirements, inspection rules, marking, certificates of conformity, packaging, transportation, and storage of copper-tungsten and silver-tungsten electrical contacts, and describes... The corresponding experimental methods. This document applies to the manufacturing and inspection of copper-tungsten and silver-tungsten electrical contacts for high and low voltage electrical appliances, and also to electronic packaging, electrodes, and shielding materials. Reference for material selection of copper-tungsten alloys in fields such as [].

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 228.1 Metallic materials - Tensile testing - Part

3 Terms and Definitions

The terms and definitions defined in GB/T 2900.4 and the following terms and definitions apply to this document.

3.1 Melting infiltration Using a metal or alloy with a melting point lower than that of the framework material, and at a temperature higher than the melting point of that metal or alloy, through a capillary tube in the pores... A process for obtaining dense products by filling the pores of unsintered or sintered porous skeletons.

3.2 sintering A series of complex phenomena or processes that occur when powder or

powder compact is heated under appropriate temperature and atmosphere conditions, causing interparticle separation. The bonding process leads to increased strength in the sintered body.

6 Determination of Iron Content by o-phenanthroline Spectrophotometric Method

GB/T 4324.27 Tungsten Chemical Analysis Methods Part

27.Determination of Carbon Content - High-Frequency Combustion Infrared Absorption Method

GB/T 5121.1 Chemical analysis methods for copper and copper alloys - Part

16 Determination of Chromium Content

GB/T 5121.20 Chemical analysis methods for copper and copper alloys - Part

20 Determination of zirconium content

GB/T 5586 Test methods for basic properties of electrical contact materials

GB/T 5587 Basic shapes, dimensions, symbols and markings of silver-based electrical contacts

GB/T 24300 Method for detecting defects in copper-tungsten electrical contacts

GB/T 26871 Metallographic Test Methods for Electrical Contact Materials

GB/T 26872 Metallographic Atlas of Electrical Contact Materials

JB/T 4107 Chemical Analysis Methods for Electrical Contact Materials

JB/T 5351 Test Methods for Basic Properties of Vacuum Switch Contact Materials