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

GB/T 26871-2024

Replacing GB/T 26871-2011

**Metallographic examination methods of the electrical contact
materials**

电触头材料金相试验方法

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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 is required.

This document replaces GB/T 26871-2011 Metallographic test methods for electrical contact materials.

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

Added Chapter 3 "Terms and Definitions" (see Chapter 3); a) Changed "cutting of metallographic specimens" to "sampling" (see 4.1, 3.1 of the 2011 edition); b) The sample cutting method using sawing, wire cutting and other methods has been added, and precautions to prevent the influence of organization have been added (see 4.1); c) The hammering method in the sample cutting method has been deleted (see 3.1.1 of the 2011 edition); d) Added the content of the inspection surface of the infiltration type and component type electrical contacts (see Table 1); e) Changed "powder pressing" to "powder

pressing" (see Table 1, 3.1.2 of the 2011 edition); f) Changed "rivet type multi-layer electrical contact" to "rivet type electrical contact" (see Table 1, 3.1.7 of the 2011 edition); g) Deleted the content of the inspection surface of the larger electrical contacts (see 3.1.6 of the 2011 edition); h) The content on the shape and size of the specimen has been deleted (see 3.1.9 of the 2011 edition); i) Changed "mounting of metallographic specimens" to "mounting" (see 4.2, 3.2 of the 2011 edition); j) Added the requirement that the selected mounting method should not change the original structure of the electrical contact (see 4.2.1); k) Changed "mechanically mounted specimen" to "mechanically mounted sample" (see 4.2.2, 3.2.2 of the 2011 edition); l) Added requirements to reduce penetration of polishing or etching agents (see 4.2.2); m) Changed "cast epoxy resin mounted specimen" to "cold mounted specimen" (see 4.2.3, 3.2.3 of the 2011 edition); n) Added the requirement that the test specimen be placed with the surface to be tested facing downwards (see 4.2.3); o) Changed "polishing of metallographic specimens" to "grinding" (see 4.3, 3.3 of the 2011 edition); p) The requirement that the sandpaper and the specimen should be rotated 90° to be perpendicular to the old wear marks has been deleted (see 3.3.2 of the 2011 edition); q) Changed "Polishing of metallographic specimens" to "Polishing" (see 4.4, 3.4 of the 2011 edition); r) The requirement that the test surface should be free of scratches and have a mirror finish has been deleted (see 3.4.1 of the 2011 edition); s) Deleted the explanation of the effect of humidity on polishing fabrics (see 3.4.2.2 of the 2011 edition); t) Added the recommended ratio of A. potassium ferrocyanide (red blood salt) and B. sodium hydroxide aqueous solution (see Table 2); u) Deleted the content of observable organization (see 3.6 of the 2011 version); v) The distance requirement from the two end points to the edge of the sample when measuring the width of the bright band of the internal silver oxide metal oxide contact has been deleted (see 4.3 of the 2011 edition);

w) Deleted sampling and conformity determination (see 4.6 of the 2011 edition); x) Deleted some precautions on the use of microscopes (see 4.7 of the 2011 edition); y) Added the content of microstructure acquisition (see 5.4). z) 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 Electrical Equipment Industry Association.

This document is under the jurisdiction of the National Technical Committee for Standardization of Electrical Alloys (SAC/TC 228).

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

First published in 2011 as GB/T 26871-2011; This is the first revision. - Metallographic test methods for electrical contact materials

1 Scope

This document describes methods for metallographic testing of electrical contact materials.

This document is applicable to the observation and analysis of the structure and defects of electrical contact materials under a metallographic microscope.

2 Normative references

GB/T 2900.4

GB/T 26872

3 Terms and definitions

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

4.1 Sampling

Sampling should be carried out according to the test purpose, the characteristics of the electrical contact material preparation process, and the provisions of the product technical conditions. Sampling should be carried out by sawing, When cutting by wire cutting, shearing or other cutting methods or grinding to the part to be tested, the influence on the tissue should be avoided during sampling. The sampling part shall be as per Table 1.

Table 1 Common electrical contact sampling locations

Electrical contact material sampling site	Section of powder pressed, alloy internal oxidation, casting, and infiltration type electrical contacts perpendicular to the working surface of the electrical contacts
Two cross sections of extruded, rolled, and drawn electrical contacts perpendicular and parallel to the extrusion (rolling, drawing) direction	Cross section of a rivet-type electrical contact taken along the axial center of the electrical contact
Two cross sections of component type electrical contacts that are perpendicular to the working surface of the electrical contacts and form a 90° angle with each other	The cross section of the electrical contact with the welding layer is perpendicular to the working surface of the electrical contact and has the welding layer bonding surface
The cross section of the electrical contact perpendicular to the working surface or ablation area after electrical performance operation	

4.2.1 General

The size of the metallographic specimen of the electrical contact is based on the actual size of the electrical contact sample, and the corresponding sample is selected for mounting.

The original structure of the electrical contacts should not be altered.