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

GB/T 17473.3-2008

Replacing GB/T 17473.3-1998

**Test methods of precious metals pastes used for
microelectronics -- Determination of sheet resistance
(English Translation)**

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Foreword

This standard is GB/T 17473-1998 "precious metal pastes used for thick film microelectronics test methods" (all parts) Integration repair Book is divided into seven sections.

--- GB/T 17473.1-2008 microelectronics test method for measuring precious metal slurry solids content;

--- GB/T 17473.2-2008 microelectronics test method for measuring the fineness of precious metal pastes;

--- GB/T 17473.3-2008 microelectronics precious metal pastes used test method for measuring the resistance parties;

--- GB/T 17473.4-2008 microelectronics adhesion testing precious metal pastes used test methods;

--- GB/T 17473.5-2008 microelectronics precious metal slurry viscosity measurement test methods;

--- GB/T 17473.6-2008 microelectronics resolution measurement test methods of precious metal pastes;

--- GB/T 17473.7-2008 microelectronics precious metal pastes used test methods

weldability, resistance to soldering determination.

This section GB/T 17473-2008 Part 3.

This Part replaces GB/T 17473.3-1998 "precious metal pastes used for thick film microelectronics test method for measuring the resistance side." this portion of the GB/T 17473.3-1998 compared to the main changes are as follows.

--- Modify the original standard name for the microelectronics precious metal pastes used test method for measuring the resistance parties;

--- Increase the determination of low temperature curing type paste square resistance;

--- The original principle of the standard, "the paste by screen printing on the ceramic substrate after sintering at a certain temperature and film thickness, width Degree under the same circumstances "was changed to." The slurry was screen-printed on a ceramic substrate or an organic resin substrate, or sintered After curing, the thickness of the film at a certain temperature and, in the case of constant width ";

--- Thickness amended as follows. light microscopic thickness for cutting sintered paste. range 0mm ~ 5mm, accuracy of 0.001mm.

Micrometer for curing paste. range 0mm ~ 5mm, accuracy of 0.001mm.

This section of Appendix A normative appendix.

This part is proposed by the China Nonferrous Metals Industry Association.

The non-ferrous metal part by the National Standardization Technical Committee.

This section is your research Platinum Ltd. is responsible for drafting.

1 Scope

This section provides test methods microelectronics precious metal pastes square resistance.

This section applies to microelectronics precious metal pastes square resistance measurement.

2 Normative references

The following documents contain provisions which, through reference in this text, constitute provisions of this part. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this section, however, encourage the parties to this part of the research agreement Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this section.

GB/T 8170 numerical rounding rules

3 PRINCIPLE OF THE METHOD

Paste by screen printing on a ceramic substrate or an organic resin substrate, sintered or cured, and the film thickness at a certain temperature, a width Under the same circumstances, the resistance is proportional to the length of the film and the film strip. By measuring the resistance of a predetermined length of the film is calculated sheet resistance.

4 Materials

Substrate. not less than 95% purity alumina substrate or an organic resin, a surface roughness of $0.5\mu\text{m} \sim 1.5\mu\text{m}$ (measured at a distance of Measured under conditions of 10mm).

5.1 Digital resistance \ Voltage Meter

Range $100\mu\text{ohm} \sim 100\text{Mohm}$, with a resolution of six significant figures, the four-wire measurements.

5.2 Ultra-high-resistance insulation resistance meter

In the range of $1 \times 10^5\text{ohm} \sim 1 \times 10^{17}\text{ohm}$, an accuracy of $\pm 2\%$.

5.3.1 Light microscopy thickness cut

Range 0mm $\sim$ 5mm, accuracy of 0.001mm.

5.3.2 Micrometer

Range 0mm $\sim$ 5mm, accuracy of 0.001mm.

5.5 Infrared oven

Maximum use temperature of $300\text{ }^{\circ}\text{C}$, temperature control accuracy of $\pm 5\text{ }^{\circ}\text{C}$.

5.6 Tunnel sintering furnace

Maximum use temperature of $1000\text{ }^{\circ}\text{C}$, temperature control accuracy of $\pm 10\text{ }^{\circ}\text{C}$.

6 Test Procedure

Experimental Environmental requirements. Ambient temperature of $15\text{ }^{\circ}\text{C} \sim 35\text{ }^{\circ}\text{C}$, relative humidity of 45% to 75%, atmospheric pressure is $86\text{kPa} \sim 106\text{kPa}$.