

ICS 77.120.99
CCS H 68



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

GB/T 17473.6-2008

Replacing GB/T 17473.6-1998

**Test methods of precious metal pastes used for
microelectronics -- Determination of resolution**

微电子技术用贵金属浆料测试方法 分辨率测定

(English Translation)

Issued on: March 31, 2008

Implemented on: September 1, 2008

Issued by: Standardization Administration of China

Table of Contents

Foreword
1 Scope
2 Normative references
3 Method summary
4 Materials
5 Instruments and equipment
6 Measuring step

Foreword

This standard replaces GB/T 17473-1998 "precious metal pastes used for thick film microelectronics test methods" (all parts), this sub-standard Seven parts.

--- 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 6.

This Part replaces GB/T 17473.6-1998 "precious metal pastes used for thick film microelectronics Test Method for Determination of the resolution." this portion of the GB/T 17473.6-1998 compared to the main changes are as follows.

--- Modify the original standard name for the microelectronics precious metal pastes used

test methods resolution determination;

- Increased curable precious metal content of the slurry was measured resolution;
- The original "photoresist film 20-25 μ m diameter stainless steel mesh mesh network" to "photoresist film mesh, mesh pore size of not greater than 54 μ m";
- Increased 6.3 curable printed samples according prescribed process requirements stand, drying, curing, film thickness control samples after curing System in 1 μ m ~ 15 μ m;
- Resolution specifications grade redefined as 0.1mm, 0.2mm, 0.3mm, 0.4mm, 0.5mm five levels.

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

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

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

Drafters of this section. Liu Cheng, Zhaoru Yun, Chen Fusheng, Ma Xiaofeng, Liu Jisong, Zhu Wuxun.

This part of the standard replaces the previous editions are.

--- GB/T 17473.6-1998.

Microelectronics precious metal pastes used test method Resolution Determination

1 Scope

This section provides microelectronics method for the determination of precious metal pastes resolution.

This section applies to the determination of precious metal pastes microelectronics resolution.

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 Method summary

Paste by screen printing in a pattern. Graphics by normal use conditions slurry sintering or curing requires curing or sintering with microstructure Mirror at a certain magnification observation and measurement of the pattern line width and line spacing film, the slurry was measured resolution.

4 Materials

4.1

photoresist film mesh, mesh pore size of not greater than 54 μ m.

4.2

comply with different use requirements slurry of substrate. Substrate surface roughness of not more than 1.5 μ m (measured at distance of 10mm condition the amount).

5 Instruments and equipment

5.1

screen printing machine.

5.2

infrared dryer, the highest temperature 350 °C, temperature control accuracy of ± 5 °C.

5.3

tunnel sintering furnace, the maximum temperature 1000 °C, temperature control accuracy of ± 10 °C.

5.4

electric blast oven, the highest temperature 300 °C, temperature control accuracy of ± 5 °C.

5.5

reading microscope, magnification 25X ~ 100X, reading accuracy 0.01mm or more.

5.6

light cut thickness or electronic micrometer, reading accuracy of 1 μ m or more.

6 Measuring step

Test at a temperature of 20 °C ~ 25 °C, relative humidity of 45% to 75% and atmospheric pressure 86kPa ~ 106kPa environment.

6.1

Stir the sample can not be introduced impurities. Screen printing machine to print graphics on a substrate, a print pattern of Table 1, the film width Degrees and line spacing is equal to five groups of 4 lines graphical components.

6.2

The printed substrate levels sintered slurry placed 5min. Infrared dryer under the conditions of 150 °C ~ 300 °C drying, the sample Dry film thickness control in 10μm ~ 35μm. After drying the sample placed in the tunnel sintering furnace, according to the slurry fired furnace temperature curve setting Sintered fired film thickness control in 5μm ~ 25μm.

6.3

The printed sample curable slurry process requirements of its provisions allowed to stand, drying, curing, after curing the film thickness control samples in 1μm ~ 15μm.