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NATIONAL STANDARD OF THE
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GB/T 17472-2008

Replacing GB/T 17472-1998

**Specification for Pastes of Precious Metal Used for
Microelectronics**

微电子技术用贵金属浆料规范

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**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine;
Standardization Administration of PRC.**

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Foreword

This Standard replaced GB/T 17472-1998 *Specification for Pastes of Precious Metals*.

Compared with the original standard, the major changes of this Standard are as follows:

- Change the name of original standard into: Specification for Pastes of Precious Metal Used for Microelectronics.
- Expand the scope of application of the original standard from precious metal pastes for thick-film microelectronics to sintered and curable precious metal pastes for microelectronics;
- Change the classification of precious metal pastes in the original standard into: sintered pastes for precious metal and curable pastes for precious metal;
- Change the original definition of sheet resistance of pastes, adhesion of pastes, resolution of pastes, solderability of pastes, and solderleaching resistance of pastes into sheet resistance, adhesion, resolution of pastes, solderability, and solderleaching resistance.
- Add the contents that the pastes for precious metal according to the process is divided into sintering pastes for precious metal and curable pastes for precious metal;
- Redefine the expression method of the designation of paste;
- Add the provisions that the hardness test of the cured film is carried out in accordance with the provisions of GB/T 6739; and the thickness of the cured film is carried out in accordance with the provisions of GB/T 13452.2.

This Standard was proposed by China Nonferrous Metals Industry Association.

This Standard shall be under the jurisdiction of National Technical Committee for Standardization of Nonferrous Metal.

This Standard was drafted by Sino-Platinum Metals Co., Ltd.

Drafting staffs of this Standard: Zhao Ruyun, Liu Cheng, Chen Fusheng, Ma Xiaofeng, Zhu Wuxun and Li Jin.

The historical edition replaced by this Standard is as follows:

- GB/T 17472-1998.

Specification for Pastes of Precious Metal Used for Microelectronics

1 Scope

This Standard specifies the product classification, requirements, test methods, inspection rules and marking, packaging, transportation, and storage of precious metal pastes for microelectronics technology.

This Standard is applicable to sintered and curable pastes of precious metal for microelectronics technology. Pastes for non-precious metal can also be implemented by reference.

2 Normative References

The provisions in following documents become the provisions of this Standard through reference in this Standard. For dated references, the subsequent amendments (excluding corrigendum) or revisions do not apply to this Standard, however, parties who reach an agreement based on this Standard are encouraged to study if the latest versions of these documents are applicable. For undated references, the latest edition of the referenced document applies.

GB/T 6739 Paints and Varnishes - Determination of Film Hardness by Pencil Test

GB/T 13452.2 Paints and Varnishes - Determination of Film Thickness

GB/T 17473.1 Test Methods of Precious Metals Pastes Used for Microelectronics-
Determination of Solids Content

GB/T 17473.2 Test Methods of Precious Metals Pastes Used for Microelectronics
- Determination of Fineness

GB/T 17473.3 Test Methods of Precious Metals Pastes Used for Microelectronics
Determination of Sheet Resistance

GB/T 17473.4 Test Methods of Precious Metals Pastes Used for Microelectronics
– Determination of Adhesion

GB/T 17473.5 Test Methods of Pastes Used for Microelectronics – Determination
of Viscosity

GB/T 17473.6 Test Methods of Precious Metal Pastes Used for Microelectronics
- Determination of Resolution

GB/T 17473.7 Test Methods of Precious Metals Pastes Used for Microelectronics
– Determination of Solderability and Solderleaching Resistance

GB/T 19445 Products of Precious Metals and Their Alloys - Packing, Marking,
Transporting and Storing

3 Terms and Definitions

This Standard adopts the following definitions.

3.1 Sintering pastes of precious metal

A slurry or paste substance that is suitable for printing or coating, and is composed of powders, additives and organic carrier of precious metals or their compounds. At a certain temperature (400°C~900°C), it can be sintered with the substrate to form an inorganic functional phase.

3.2 Curable pastes of precious metal

A slurry or paste substance that is suitable for printing or coating, and is composed of powders, flake powders, inorganic additives, organic additives, organic resins and organic solvents of precious metals or their compounds. Under certain conditions (a certain temperature, light or radiation, etc.), it can be cured and attached to the substrate to form a functional phase.

3.3 Solids content of sintering pastes

After the paste is burned at 400°C~900°C, the ratio of the mass of the remaining substance to the mass of the specimen is expressed by mass fraction.

3.4 Solids content of curable pastes

After the paste is heated at room temperature to 250°C, the ratio of the mass of the remaining substance to the mass of the specimen is expressed by mass fraction.

3.5 Fineness of pastes

The size of the solid particles in the paste.

3.6 Sheet resistance

The resistance of a thin conductive film with the same length and width after the paste is cured or sintered. The symbol is R_s , in $\Omega/\square$ or $m\Omega/\square$.

with a temperature of 15°C~35°C, a relative humidity of 45%~75%, and an atmospheric pressure of 86kPa~106kPa.

5.1 The determination of the solid content of the pastes of precious metal shall be carried out in accordance with the provisions of GB/T 17473.1.

5.2 The fineness test for the pastes of precious metal shall be carried out in accordance with the provisions of GB/T 17473.2.

5.3 The sheet resistance test shall be carried out in accordance with the provisions of GB/T 17473.3.

5.4 The adhesion test shall be carried out in accordance with the provisions of GB/T 17473.4.

5.5 Viscosity test for the pastes of precious metal shall be carried out in accordance with the provisions of GB/T 17473.5.

5.6 The resolution test shall be carried out in accordance with the provisions of GB/T 17473.6.

5.7 Solderability and solderleaching resistance tests shall be carried out in accordance with the provisions of GB/T 17473.7.

5.8 The hardness test of the cured film shall be carried out in accordance with the provisions of GB/T 6739.

5.9 The thickness test of the cured film shall be carried out in accordance with the provisions of GB/T 13452.2.

5.10 Other test contents and test methods shall be negotiated by both the supplier and the purchaser.

6 Inspection Rules

6.1 Inspection and acceptance

6.1.1 The pastes of precious metal shall be inspected by the supplier's technical supervision department to ensure that the product quality meets the requirements of this Standard; and the quality certificate shall be filled in.

6.1.2 The purchaser shall inspect the products received in accordance with the provisions of this Standard. If the inspection result does not comply with the provisions of this Standard, it shall be submitted to the supplier within one month from the date of receipt of the product; and the supplier and the buyer shall negotiate and resolve it. If arbitration is required, it shall be carried out by an organization recognized by both

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