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

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**Metallic and other inorganic coatings -- Electrodeposited gold
and gold alloy coatings for electrical, electronic and
engineering purposes -- Specification and test methods**

金属及其他无机覆盖层 电气、电子和工程用金和金合金电镀层 技术规范和试验
方法

(English Translation)

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Foreword

This standard was drafted in accordance with the provisions given in GB/T 1.1-2009.

This standard uses redrafted law revision using ISO 27874:2008 "metal and other inorganic coatings for electrical, electronic and engineering Gold and gold alloy plating technical specifications and test methods. " this standard and ISO 27874:2008 compared to the technical differences and the reasons are as follows.

--- On normative references, this standard made a technical difference with the adjustment to adapt to China's technical conditions, adjust the situation Concentration reflected in the second chapter "Normative references", the specific adjustments are as follows.

Use GB/T 2423.28 equivalent to the international standard instead of IEC 60068-2-20 (see 6.12);

Replace ISO 2080 with GB/T 3138 equivalent to international standards (see Chapter 3);

Replace ISO 2177 with GB/T 4955 equivalent to international standards (see A.1);

GB/T 5270 equivalent to the international standard instead of ISO 2819 (see 6.9);

Replace GB/T 6461 equivalent to ISO 10289 (see 6.5) with an equivalent international standard;

Replace ISO 1463 with GB/T 6462 equivalent to international standards (see A.1);

Replace ISO 3882 with GB/T 6463 equivalent to international standards (see B.1);

Replacing ISO 4516 with International Standard GB/T 9790 (see 6.11);

Use GB/T 11378 instead of ISO 4518 equivalent to international standards (see B.4.2);

Use non-equivalent GB/T 12305.6 instead of ISO 4524-6 (see 6.16);

Replace ISO 2064 with GB/T 12334 equivalent to international standards (see Chapter 3);

Replace ISO 4519 (see 4.1) with GB/T 12609 equivalent to international standard;

Replace ISO 3497 with GB/T 16921 equivalent to international standards (see A.1);

Use GB/T 17720 equivalent to ISO 10308 (see 6.4) equivalent to international standards;

Use GB/T 18179 equivalent to international standard instead of ISO 12687 (see 6.4);

Use equivalent to the international standard GB/T 19349 instead of ISO 9587 (see 6.7);

Use equivalent to international standards GB/T 19350 instead of ISO 9588 (see 6.8);

Use GB/T 19351 equivalent to the international standard instead of ISO 14647 (see 6.4);

Replace ISO 3543 with GB/T 20018 equivalent to the international standard (see B.3.1).

This standard is proposed by the China Machinery Industry Federation.

This standard by the National Metal and Nonmetallic Coating Standardization Technical Committee (SAC/TC57) centralized.

This standard drafting unit. Wuhan Institute of Materials Protection, FIYTA (Group) Co., Ltd., Wuhan material security Paul plating production technology Into the center, Shandong Standardization Association, Shenzhen Zhenpeng and brand promotion center.

Introduction

With the growth of the electrical and electronics industries, the engineering uses of gold and gold alloy coatings continue to expand. Low voltage and low current, dry circuit as well Microwave frequency devices require the use of low-resistance interconnect systems, connectors, and waveguides. The connection is extremely important for the stability of the contact surface Device, choose not discolored, low-resistance gold plating is reasonable. The need to improve the wear resistance of gold plating encourages a new development of gold plating solutions the composition or crystal structure of the gold plating layer is changed by controlling the content of the metal and the non-metal additives in the plating bath. Printed circuit industry's special needs the acidic gold plating solution developed to free from cyanide bath, the formation of a soft coating with hard, bright and solderability characteristics. Current High-speed gold plating at a density of.200A/dm² has been used for continuous strip plating or spot-selective gold plating and gold alloy plating.

The high cost of metal gold promotes the development of partial gold plating and thickness distribution type gold plating technology so that the gold plating layer only exists when the workpiece needs gold Active parts to control the use of gold. Therefore, designers often specify the need for gold-plated parts and coating thickness distribution, if necessary, still in Figure Appropriately marked on paper.

With the introduction of many new gold-plating formulations and the development of engineering applications, there is an urgent need to develop technical standards to specify gold and gold alloy coatings Requirements and test methods to verify that the coating meets the requirements. To improve the gold and gold alloy coating quality, in order to achieve the purpose of engineering applications, the composition, appearance, hardness, thickness, purity, porosity, wear resistance, solderability, contact resistance, infrared reflectance, and other performance.

Metal and other inorganic coatings Electrical, Electroplating of electronics and engineering with gold and gold alloys Layer Specifications and Test Methods Warning --- Some of the substances and processes required by this standard, if not take appropriate measures, will be harmful to health. This standard it does not discuss any health hazards, safety or environmental issues and regulations involved in the use of the standard. Standard users have a responsibility to establish a co-operation Applicable health, safety and

environmental regulations and take appropriate measures to bring them in line with national, local and international regulations and rules. Follow this standard does not mean that exemption from legal obligations.

1 Scope

This standard specifies the metal and non-metallic substrates for electrical, electronic and other engineering gold and gold alloy coating requirements, also provides for testing Test method of coating performance.

Although this standard does not specify the state of the substrate before plating, finishing or surface roughness, but the appearance of gold or gold alloy coating and performance to take Depends on the state of the substrate. It is necessary for the buyer to stipulate the finishing and surface roughness of the substrate so that the coating performance meets the product requirements.

This standard does not apply to the threaded parts or unformed plate or strip forming coating.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version applies to this article Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 2423.28 Electrotechnical environmental testing Part 2. Test methods Test T. Soldering (GB/T 2423.28-2005, IEC 60068-2-20:1979, IDT) GB/T 3138 metal and other inorganic surface coating terminology (GB/T 3138-2015, ISO 2080:2008, IDT) GB/T 4955 Metallic coating thickness measurement Anodic dissolution coulometry (GB/T 4955-2005, ISO 2177.

2003, IDT)

GB/T 5270 Metallic base metal coating on the electrodeposited and chemical deposited layer adhesion strength test methods Review (GB/T 5270-2005, ISO 2819:1980, IDT) GB/T 6461 Metallic substrates and metal and other inorganic coatings after corrosion test specimens and specimens of the rating (GB/T 6461-2002, ISO 10289:1999, IDT) GB/T 6462 metal and oxide coating thickness measurement microscopy (GB/T 6462-2005, ISO 1463:2003, IDT) GB/T 6463 Review of Methods for Measuring Thickness of Metals and Other Inorganic Coatings (GB/T 6463-2005, ISO 3882:2003, IDT) GB/T 9790 Metallic coatings and other coatings Vickers and Knoop microhardness test (GB/T 9790-1988, eqv ISO 4516:1980) GB/T 11378 metal cover layer thickness measurement profiler method (GB/T 11378-2005, ISO 4518:1980, IDT) GB/T 12305.6 Metallic coatings - Test methods for gold and gold alloy plating - Part 6. Determination of residual salts