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INTERNATIONAL STANDARD

ISO
4524-6

First edition
1988-10-01

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION
ORGANISATION INTERNATIONALE DE NORMALISATION
МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ

Metallic coatings — Test methods for electrodeposited gold and gold alloy coatings —

Part 6 :
Determination of the presence of residual salts

Revêtements métalliques — Méthodes d'essai des dépôts électrolytiques d'or et d'alliages d'or —

Partie 6 : Recherche des sels résiduels

Reference number
ISO 4524-6 : 1988 (E)

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Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 4524-6 was prepared by Technical Committee ISO/TC 107, *Metallic and other inorganic coatings.*

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

ISO 4524 consists of the following parts, under the general title *Metallic coatings — Test methods for electrodeposited gold and gold alloy coatings:*

— *Part 1: Determination of coating thickness*

— *Part 2: Environmental tests*

— *Part 3: Electrographic tests for porosity*

— *Part 4: Determination of gold content*

— *Part 5: Adhesion tests*

— *Part 6: Determination of the presence of residual salts*

— *Part 7: Determination of sheet resistivity*

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Printed in Switzerland

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Metallic coatings — Test methods for electrodeposited gold and gold alloy coatings —

Part 6 :
Determination of the presence of residual salts

1 Scope and field of application

This part of ISO 4524 specifies a test method for assessing the freedom from contamination by residual salts of gold and gold alloy coatings for engineering, decorative and protective purposes. It is applicable to parts made entirely of metal and excludes composite parts, for example those containing both plastics and coated metal.

2 Principle

Boiling of the parts in water of known electrical conductivity for a specified time and measurement of any increase in conductivity arising from extraction of residual salts and other conducting impurities.

3 Reagent

Water, having a conductivity not greater than 100 µS/m at 20 ± 1 °C.

4 Apparatus

All glassware used shall be made of borosilicate glass, shall be reserved solely for this determination and shall meet the requirements for cleanliness of 5.2.

4.1 Round-bottomed flask, of capacity 250 ml, fitted with a reflux water condenser.

4.2 Beaker, of suitable dimensions for the parts being tested, marked at a volume of 100 ml and fitted with a suitable means of reducing undue evaporative loss of water, for example a water-cooled lid.

4.3 Conductivity meter.

5 Procedure

5.1 Test portion

Take a part or parts, consisting entirely of coated metal and having a total surface area of about 30 cm^2. Depending on their dimensions (see 5.3), carry out the determination in accordance with 5.3.1 or 5.3.2, as appropriate.

Take care to avoid accidental contamination of the test portion. Use clean gloves to handle the parts under examination.

5.2 Check for cleanliness of apparatus

Before carrying out any determination, transfer 100 ml of water (clause 3) to the extraction vessel (4.1 or 4.2) and boil it gently for 10 min using the appropriate test conditions (see 5.3.1 and 5.3.2). Allow the water to cool to 20 ± 1 °C and measure its conductivity with the conductivity meter (4.3).

If the value exceeds 100 µS/m, repeat the procedure with a further 100 ml of the water. If the value again exceeds 100 µS/m, discard the extraction vessel and repeat the test using a new vessel.

Reserve satisfactory glassware solely for this determination.

5.3 Determination

5.3.1 Parts with a cross sectional width or diameter not greater than 15 mm and not longer than 40 mm

Having checked the apparatus for cleanliness (see 5.2), transfer the test portion (5.1) to the round bottomed flask (4.1) and add 100 ml of water (clause 3), the conductivity of which has been measured immediately prior to the determination, ensuring that the water completely covers the test piece. Fit the flask with its reflux condenser, bring the water in the flask to the boil and allow it to boil gently for 10 min. Allow the water to cool to 20 ± 1 °C and measure its conductivity with the conductivity meter (4.3). Calculate any increase in conductivity incurred as a result of the determination.

5.3.2 Parts with a cross sectional width or diameter greater than 15 mm and longer than 40 mm

Carry out the procedure described in 5.3.1 but placing the test portion (5.1) in the beaker (4.2) to which water (clause 3) has been previously added to the 100 ml mark. Prevent undue evaporative loss during the determination using, for example, the water-cooled lid (4.2), adding more water (clause 3), if necessary, to replace that lost due to boiling.