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**NATIONAL STANDARD OF THE
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**Determination of regulated substance (hexavalent chromium) in
electrical and electronic equipment**

电子电气产品中限用物质六价铬检测方法

(English Translation)

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Foreword

This guidance document is presented by the Environmental Standardization Technical Committee (SAC/TC297) of the National Electrical and Electronic Products and Systems.

Return to the mouth.

The main technical draft of this guiding technical document is. Shenzhen Institute of Metrology and Quality Inspection.

This guiding technical document participated in the drafting unit. Shenzhen Entry-Exit Inspection and Quarantine Bureau, Chengdu Product Quality Supervision and Inspection Institute, Zhejiang Fangyuan Testing Group Co., Ltd., China Quality Certification Center, Beijing Pani Physicochemical Analysis and Testing Center.

1 Scope

This guidance document specifies methods for the determination of hexavalent chromium in various electrical and electronic products.

This guidance document applies to the determination of hexavalent chromium in various electrical and electronic products.

2.1 Principle

Extracting water-soluble and water-insoluble hexavalent chromium compounds from electrical and electronic products using extracts, separating samples and extracts, and extracting the hexavalent chromium in the liquid is reacted with diphenylcarbazide in an acidic solution to form a purple-red complex, which is carried out at a maximum absorption wavelength of 540 nm.

Spectrophotometric quantification.

The lower limit of quantification of the method. 2.0 mg/kg.

2.2 Reagents and materials

Unless otherwise stated, reagents that meet national or industrial standards, deionized water or water of equivalent purity (resistivity) are used.

18.2Mohm).

2.2.1

Sulfuric acid. excellent grade pure.

2.2.2

Dipotassium hydrogen phosphate. analytically pure.

2.2.3

Potassium dihydrogen phosphate. analytically pure.

2.2.4

anhydrous magnesium chloride. analytically pure.

2.2.5 1,5-Diphenylcarbazide. Analytically pure.

2.2.6

Sodium hydroxide. analytically pure.

2.2.7

anhydrous sodium carbonate. analytically pure.

2.2.8

Acetone. Analytical grade.

2.2.9

Sodium dihydrogen phosphate monohydrate. analytically pure.

2.2.10

Potassium dichromate. certified standard substance.

2.2.11

Sulfuric acid, 10% (volume ratio). Pipette 10mL sulfuric acid (2.2.1) slowly into 80mL water, transfer to 100mL volumetric flask Dilute to the mark with water.

2.2.12 1,5-Diphenylcarbazide developer. Weigh 0.5g of 1,5-diphenylcarbazide (2.2.5) dissolved in 100mL of acetone (2.2.8) After that, transfer to a brown bottle for cryopreservation. When the solution fades, it should be discarded and reconstituted.

2.2.13

Extract. Weigh (20.00 ± 0.05) g of sodium hydroxide (2.2.6) and (30.00 ± 0.05) g of anhydrous sodium carbonate (2.2. 7), with water Dissolve and dilute to 1L, seal $(20 \sim 25) ^\circ \text{C}$ in a polyethylene plastic bottle, the shelf life of 1 month.

2.2.14

Buffer A. Weigh 87.09g of dipotassium hydrogen phosphate (2.2.2) and 68.04g of potassium dihydrogen phosphate (2.2.3) dissolved in water and transferred to Dilute to the mark with a 1 L volumetric flask (this buffer pH = 7).

2.2.15

Buffer B. Dissolve 55 g of sodium dihydrogen phosphate monohydrate (2.2.9) in 100 mL of water.

2.2.16

Wetting agent.

2.2.17

Hexavalent chromium standard stock solution (50.0mg/L). Accurately weigh 0.1414g of potassium dichromate that has been dried to a constant weight $(105 \sim 110) ^\circ \text{C}$ (2.2.10), dissolved in water, and made up to 1000 mL, 1.00 mL of this solution contains 0.050 mg of hexavalent chromium.

2.2.18

Standard solution of hexavalent chromium (5.00mg/L). Pipette 10.0mL of hexavalent chromium standard stock solution (2.2.17) in 100mL capacity in a measuring flask, dilute to the mark with water, and 1.00 mL of this solution contains 0.00500 mg of hexavalent chromium. Now available.