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

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**Determination of regulated substances (lead, mercury and
cadmium) in electrical and electronic equipment**

电子电气产品中限用物质铅、汞、镉检测方法

(English Translation)

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Foreword

Appendix A of this guidance document is an informative annex.

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

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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. Zhejiang Fangyuan Testing Group Co., Ltd., Chengdu Product Quality Supervision and Inspection Institute, Shanghai Entry-Exit Inspection and Quarantine Bureau, China Quality Certification Center.

1 Scope

This guidance document specifies methods for the determination of lead, mercury, and cadmium in various electrical and electronic products.

This guidance document is applicable to the determination of lead, mercury and cadmium in various electrical and electronic products.

2.1 Principle

After the sample is ashed or acid digested, it is injected into a flame atomic absorption spectrophotometer. Within a certain concentration range, lead (Pb) and cadmium (Cd) are used.

The absorption value of the sub-specific wavelength is proportional to its content, and the lead and cadmium are quantitatively analyzed compared with the standard series.

The lower limit of quantification of the method. lead (Pb) 5.0 mg/kg, cadmium (Cd) 2.5 mg/kg.

2.2.1 Reagents

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

18.2Mohm).

2.2.1.1

Nitric acid. excellent grade pure.

2.2.1.2

Hydrogen peroxide. analytically pure.

2.2.1.3

Hydrochloric acid. excellent grade.

2.2.1.4

Sulfuric acid. excellent grade pure.

2.2.1.5

Perchloric acid. excellent grade.

2.2.1.6

Hydrofluoric acid. analytically pure.

2.2.1.7

Nitric acid (1+1, by volume). Mix 1 part of nitric acid (2.2.1.1) with 1 part of water.

2.2.1.8

Mixed acid 1. Nitric acid + perchloric acid (4+1, by volume). Take 4 parts of nitric acid (2.2.1.1) and 1 part of perchloric acid (2.2.1.5) mixing.

2.2.1.9

Mixed acid 2. hydrochloric acid + nitric acid + water (2+1 + 2, volume ratio). Take 2 parts of hydrochloric acid (2.2.1.3), 1 part of nitric acid (2.2.1.1) and Mix 2 parts of water.

2.2.1.10

Mixed acid 3. nitric acid + hydrofluoric acid (1+3, volume ratio). Take 1 part of nitric acid (2.2.1.1) and 3 parts of hydrofluoric acid (2.2.1.6) mixing.

2.2.1.11

Nitric acid (2%). Mix 2 parts of nitric acid (2.2.1.1) with 65 parts of water.

2.2.1.12

Lead and cadmium standard solution. certified standard substance with a concentration of 100mg/L or 1000mg/L.

2.2.2 Equipment

2.2.2.1

Flame atomic absorption spectrophotometer with lead and cadmium hollow cathode lamps.

2.2.2.2

Muffle furnace.

2.2.2.3

Microwave digestion furnace.

2.2.2.4

Adjustable hot plate.

2.2.2.5

Low temperature pulverizer.

2.2.2.6 10,000-point balance.

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