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

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**Limits and inspection of mercury content of button batteries for
import and export**

进出口扣式电池汞含量限值和检验方法

(English Translation)

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Foreword

This standard is proposed and managed by the National Certification and Accreditation Administration.

1 Scope

This standard specifies the sampling, testing methods and determination of test results for the detection of mercury content in import and export button cells.

This standard applies to the import and export of zinc-silver oxide button batteries, alkaline zinc-manganese dioxide button batteries, zinc-air button batteries test.

This standard does not apply to the inspection of lithium button batteries and fluorocarbon button batteries.

2 Terms and definitions

The following terms and definitions apply to this standard.

For the implementation of the sampling test, the same brand, the same model, the unit export products produced under the same production conditions or the same import the imported products of the same and the same bill of lading are called inspection batches, referred to as batches.

3 Technical requirements

The mercury content of the button battery should be no more than 20mg/g, and the "packaged mercury content $\leq 20\text{mg/g}$ " should be indicated on the minimum package.

The method for labeling the mercury content of export button batteries that are not sold domestically may be handled in accordance with the relevant provisions of the importing country or sales contract.

4.1 Sampling

4.1.1

The product submitted for inspection should be packaged in its entirety.

4.1.2

Randomly sample 10 samples in the batch.

4.2 Testing requirements

4.2.1

In any of the following cases, mercury content testing should be carried out.

- a) the first batch of import and export or import and export for more than one year without import and export;
- b) when the materials, processes and production plants of the products are subject to change;
- c) when the contract or letter of credit requires the issuance of a mercury content test certificate;
- d) Other regulations should be carried out when mercury content is tested.

4.3.1 Principle

The button battery is decomposed with nitric acid and hydrochloric acid, filtered, and part of the filtrate is separated into a mercury vapor generator, and stannous chloride is added to reduce the mercury ions.

For metal mercury, vapor is drawn into the mercury detector (or atomic absorption spectrophotometer) absorption tube, and the mercury atom has a special wavelength for the 253.7 nm mercury resonance line.

The absorption is collected, thereby measuring the absorbance.

4.3.2 Reactive

$\text{Hg}^{2+} + \text{Sn} \rightarrow 2\text{Hg} + \text{Sn}^{4+}$

4.3.3 Reagents

Unless otherwise stated, only analytically pure reagents were used in the analysis. The experimental water was either distilled or deionized water or equivalent.

Water.

4.3.3.1

Hydrochloric acid (rho 1.19 g/mL).

4.3.3.2

Hydrochloric acid (1+1).