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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 17832-2021

Silver alloy jewelry Determination of silver content Potassium bromide volumetric method (potentiometric titration method)

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foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1.Structure and Drafting Rules of Standardization Documents" drafted.

This document replaces GB/T 17832-2008 "Determination of silver content in silver alloy jewelry by potassium bromide volumetric method (potentiometric titration method)". Book

Compared with GB/T 17832-2008, except for structural adjustment and editorial changes, the main technical changes are as follows.

--- Delete the normative reference document GB 11887 (see Chapter 2 of the.2008 edition);

--- Added normative reference document ISO 11596 (see Chapter 2);

--- Revised the requirements for nitric acid (see 5.1, 4.1 of the.2008 edition);

--- Revised the provisions of the sampling method (see Chapter 7, 6 of the.2008 edition);

--- Added the corresponding health and safety operating procedures warnings in the test steps (see Chapter 8);

--- Deleted 7.1 of the.2008 edition (see 7.1 of the.2008 edition);

--- Modified the weighing range of samples and standard silver (see 8.1.1 and 8.2.1, 7.2.1 and 7.3.1 of the.2008 edition);

--- Added "Cover a watch glass over the beaker" (see 8.1.1 and 8.2.1);

--- Delete the provisions on the volume of water (see 7.2.1 and 7.3.1 of the.2008 edition);

--- Increased the sampling process in the test report (see Chapter 10).

This document uses the redrafted method to modify the use of ISO 11427.2014 "Determination of silver content in jewelry silver alloy jewelry. Potassium bromide content

Quantitative method (potentiometric titration)".

Compared with ISO 11427.2014, this document has many adjustments in structure. Appendix A lists this document and ISO 11427.2014.

A comparison list of the changes in the chapter numbering.

There are technical differences between this document and ISO 11427.2014, and these differences involve clauses that have been

The vertical single line (|) of the position is marked, and a list of the corresponding technical differences and their reasons is given in Appendix B.

The following editorial changes have been made to this document.

--- Modify the file name to "Determination of Silver Content in Silver Alloy Jewelry by Potassium Bromide Volumetric Method (Potentiometric Titration Method)".

Please note that some content of this document may be patented. The issuing agency of this document assumes no responsibility for identifying patents.

1 Scope

This document describes a method for the determination of silver content in silver alloy jewellery using the potassium bromide volumetric method (potentiometric titration).

This document applies to silver alloy jewelry, handicrafts and their materials with a silver content of 800 per mille~999 per mille. These silver alloys may contain copper,

Zinc, cadmium and palladium, except for palladium, which should be precipitated and separated before starting the titration, the presence of other elements will not interfere with this determination method.

This method is designated by GB 11887 as the arbitration method for the determination of silver content in silver alloy jewelry.

2 Normative references

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, dated citations

documents, only the version corresponding to that date applies to this document; for undated references, the latest edition (including all amendments) applies to

this document.

GB/T 9725 General Rules for Potentiometric Titration of Chemical Reagents (GB/T 9725-2007, ISO 6353-1.1982, NEQ)

3 Terms and Definitions

There are no terms and definitions that need to be defined in this document.

4 Principles

The sample is dissolved in dilute nitric acid, titrated with potassium bromide solution, and the titration end point is determined according to the potential change during the titration process.

Determine the silver content in the solution to be tested.

Note. See the relevant provisions in GB/T 9725 for the determination method of the titration end point in this document.

5 Reagents or materials

Unless otherwise stated, only reagents confirmed to be analytically pure and distilled water or water of equivalent purity were used in the analysis.

5.2 Nitric acid mixed solution. Mix 1 volume of nitric acid (5.1) and 2 volumes of water.

5.3 Potassium bromide solution, c(KBr)=0.1mol/L. dissolve 11.901g potassium bromide (after drying at 105°C) in water, and dilute to

1000mL.

5.4 Butanedione oxime disodium salt octahydrate solution. Dissolve 10g of butanedione oxime disodium salt octahydrate in 1000mL of water.