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

**中华人民共和国国家标准**

**GB/T 18043-2013**  
**Replaces GB/T 18043-2008**

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**Jewellery—Determination of precious metal content—Method  
using X-Ray fluorescence spectrometry**  
**首饰 贵金属含量的测定 X 射线荧光光谱法**

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## Foreword

This Standard is drafted according to the rules specified in GB/T 1.1-2009.

This Standard replaces the GB/T18043—2008 *Jewellery - Determination of Precious Metal Content - Method Using X-Ray Fluorescence Spectrometry*, and there are mainly the following changes compared with the GB/T18043—2008:

- Revised scope of application, clarified the test method as screening test;
- Added the contents of the terms;
- Given a detailed description of basic principles of X-ray fluorescence spectrometry, and stated definitely scope of application of the method in terms of working principles;
- Improved the resolution requirements for X-ray fluorescence spectrometer of the method;
- Refined test processes, and clarified operation steps of the method;
- Added description of contents and illustration for screening and determination in accordance with scope of measurement results.
- Added description of limitations of the method;
- Added Annex A, Annex B and Annex C.

This Standard is put forward by China National Light Industry Council.

This Standard is under the jurisdiction of National Technical Committee (SAC/TC 256) on Jewellery of Standardization Administration of China.

This Standard is drafted by: National Gold and Silver Products Quality Supervision and Testing Center (Nanjing), National Jewellery Quality Supervision and Inspection Center, China Institute of Metrology, National Gemstone Quality Supervision and Testing Center, National Gold and Silver Products Quality Supervision and Testing Center (Shanghai), National Gold Diamond Products Quality Supervision and Testing Center, Tianjin Product Quality Supervision and Testing Technology Research Institute, Chengdu Product Quality Supervision and Testing Institute.

The main drafters of this Standard: Yang Pei, Yang Su, Zhou Tao, Duan Tiyu, Li Suqing, Ke Jie, Xie Qiyao, Cheng Youfa, Cao Weiyu, Shen Feng, Wang Donghui, Shen Meidong, Fang Mingshu, Liu Huafeng, Wang Chunsheng, Li Yukun, Li Guogui, Li Wujun.

The information concerning the issuance of previous editions of this Standard replaced by this Standard is as follows:

- GB/T 18043—2000, GB/T 18043—2008.

## **Introduction**

It is necessary for testing laboratory where this Standard to develop implementation regulations for personnel, facilities, and environmental conditions, equipment (including working reference materials), uncertainty evaluation.

During use of this Standard, it is necessary to refer to Annex A, Annex B, Annex C for sample testing, data processing and result determination.

# **Jewellery—Determination of precious metal content—Method using X-Ray fluorescence spectrometry**

## **1 Scope**

This Standard specifies the methods and requirements for applying X-ray fluorescence spectrometry in determination of precious metal content of jewellery.

This Standard applies to qualitative analysis for jewellery and other artwares and screening test for content of precious metal therein (gold, silver, platinum, and palladium).

## **2 Normative references**

The articles contained in the following documents have become this document when they are quoted herein. For the dated documents so quoted, all the modifications (Including all corrections) or revisions made thereafter shall be applicable to this document.

GB 11887 Jewellery - Fineness of precious metal alloys and designation

## **3 Terms and definitions**

For the purpose of this document, the following terms and definitions shall apply.

### **3.1**

#### **Screening**

A kind of analysis method for preliminary quantization of elements to be measured in substances to be tested.

### **3.2**

#### **Working reference materials**

Equipping with one kind of the material or substance with the adequate uniformity and the determined properties which are used to correct the measurement device, evaluate the measurement method or assign the value for the materials, under the condition without the reference materials owning the relevant certificates issued by the state and the national standard samples, and equipping with the reference materials prepared by the laboratory independently and owning the traceable property value.



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