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

**GB/T 9288-2019**

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**Gold jewellery alloys - Determination of gold - Cupellation  
method (fire assay)**

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### Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard replaces GB/T 9288-2006 "Gold alloy jewelry gold content determination gray blowing method (fire test method)".

Compared with GB/T 9288-2006, the main technical changes of this standard are as follows.

- Removed the normative reference document GB 11887 (see Chapter 2 of the.2006 edition);
- Added normative reference document ISO 11596 (see Chapter 2);
- Revised the requirements for nitric acid (see 5.1, 5.1 and 5.2 of the.2006 edition);
- Increased sampling requirements (see Chapter 7);
- Added appropriate health and safety procedures warnings in the test procedure (see 8.1);
- Increased initial testing requirements (see 8.2);
- Revised the formula for calculating the gold content of the sample, consistent with ISO 11426.2014 (see Chapter 9).

This standard uses the redrafting method to modify the use of ISO 11426.2014 "jewelry gold alloy jewelry gold content determination gray blowing method (Fire Test Method).

This standard has more structural adjustments than ISO 11426.2014. Appendix A lists this

standard and ISO 11426.2014.

The chapter number is compared to the list.

There are technical differences between this standard and ISO 11426.2014. The terms of these differences have been passed vertically in the blank position on the outside.

The single line (I) is marked, and Appendix B gives a list of the corresponding technical differences and their causes.

This standard also made the following editorial changes.

--- Change the standard name to "Gold Alloy Jewelry Gold Content Determination Gray Blowing Method (Fire Test Method)".

This standard was proposed by the China Light Industry Association.

This standard is under the jurisdiction of the National Jewelry Standardization Technical Committee (SAC/TC256).

This standard was drafted. Beijing Guoshou Jewelry Testing Co., Ltd./National Jewelry Quality Supervision and Inspection Center, Beijing Guoshou Jewelry

Standardization Research Center.

## 1 Scope

This standard specifies the method for determining the gold content of gold alloy jewellery and related products by the ash blowing method (fire test method).

This standard applies to various gold alloy jewellery and related products with a gold content of 333.0 per mille~999.5 per mille (excluding platinum, hydrazine, etc., insoluble in nitric acid

The composition of the gold content.

This standard is designated by GB 11887 as the arbitration method for the analysis of gold content in gold alloy jewellery and related products.

## 2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article.

Pieces. For undated references, the latest edition (including all amendments) applies to this document.

ISO 11596 Sampling of precious metal alloy jewellery and related products  
(Jewelry-Samplingofpreciousmetalal-

Loysforandinjeweleryandassociatedproducts)

### 3 Terms and definitions

The following terms and definitions apply to this document.

#### 3.1

Ash blowing cupelation

The gold and/or silver containing the impurity metal is melted in a high-temperature furnace ash dish (a flat-bottomed porous disk made of refractory or high-temperature resistant material),

The process of blowing off the hot air stream over it to separate the impurities is then carried out. Lead, copper, tin and other metal impurities to be separated by hot air oxygen

It is partially evaporated and partially absorbed by the ash dish.

#### 3.2

Gold parting of gold

The silver in the gold-silver alloy particles after the ash blowing is dissolved with nitric acid to realize the process of gold and silver separation.

### 4 Principle of the method

A suitable amount of silver was added to the sample in proportion, and lead was used as a buffering agent, and placed in a porous ash dish for ash blowing. Lead oxides and impurities are

The ash dish is absorbed, while the gold and silver are retained in a ash dish and smelted into gold and silver alloy particles (precious metal beads). Roll it into thin slices and roll them into small rolls, placed in nitric acid

In the middle, the silver is gradually dissolved to obtain the quality of the gold. At the same time, the standard gold is used for analysis and comparison, which can eliminate the systematic error in the analysis process.

#### 5.2 Lead foil, free of precious metals and antimony.

The lead pellets are melted and cast into 0.2mm thick lead foil, and the oil is wiped off for use.