

ICS 77.150.99

CCS H68

YS

Industry Standard of Nonferrous Metals
of the People's Republic of China

YS/T 943-2013

Palladium(II) sulfate

硫酸钯

(English Translation)

Issue date: 2013-10-17

Implementation date: 2014-03-01

Issued by Ministry of Industry and Information Technology of the People's
Republic of China

Foreword

National Committee for Standardization of Nonferrous Metals (SAC/TC243) is in charge of this English translation. In case of any doubt about the contents of English translation, the Chinese original shall be considered authoritative.

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

This standard was prepared by SAC/TC 243 National Nonferrous Metal Standardization Technical Committee.

Palladium(II) sulfate

1 Scope

This standard specifies the requirements, test methods, inspection rules, marking, packaging, transportation, storage, quality certificate and the order (or contract) information of palladium(II) sulfate.

This standard is applicable to palladium(II) sulfate used in fine chemical and electroplating industry.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

GB/T 23276 Method for chemical analysis of palladium compound--Determination of palladium content--Complexometric titration using butanedione dioxime releasing EDTA.

YS/T 362 Determination of trace impurities in purity palladium by atomic emission spectrometric.

3 Requirements

3.1 Product classification

Products shall be classified as anhydrous palladium sulfate and dihydrate palladium sulfate. Their chemical formulas are shown as follows:

Anhydrous palladium sulfate: PdSO_4 .

Palladium sulfate dihydrate: $\text{PdSO}_4 \cdot 2\text{H}_2\text{O}$.

3.2 Chemical composition

3.2.1 The mass fraction of palladium in anhydrous palladium sulfate shall be $\geq 52.0\%$.

The mass fraction of palladium in palladium sulfate dihydrate shall be $\geq 44.0\%$.

3.2.2 The quantity of impurities in palladium sulfate shall comply with the specification in table 1.

Table 1. The mass fraction of impurities in palladium sulfate (shall not be higher than) %

Ag	Au	Pt	Rh	Ir	Pb	Ni	Cu	Fe	Cd	Cr
0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

3.3 Dissolution test

The palladium sulfate shall dissolve in dilute sulfuric acid completely.

3.4 Appearance quality

Anhydrous palladium sulfate shall be dark red crystal.

Palladium sulfate dihydrate shall be red-brown crystal powder.

4 Test methods

4.1 Determination of palladium content

As specified in GB/T 23276, measure a certain amount of compound to determine the quantity of palladium.

4.2 Determination of impurities

Weigh a certain amount of palladium compound which is accurate to 0.0001g and reduce to metal palladium by heating in a stream of hydrogen. Then determine the amount of impurities as specified in YS/T 362.

4.3 Dissolving test

Measure 0.5 g of sample and add 20 mL of dilute sulfuric acid(1+3), the sample shall dissolve in dilute sulfuric acid completely.

4.4 Appearance quality

Visual test method shall be applied to check the appearance of palladium sample.

5 Inspection rules

5.1 Inspection and acceptance

5.1.1 The product shall be inspected by the supplier to ensure all products are in conformity with this standard (or contract). A quality certificate shall be filled out accordingly.

5.1.2 Inspection of the product received shall be carried out by the buyer in accordance with the requirements of this standard. In case of non-conformity with the requirements of this standard or the stipulation of the contract, complaints of non-conformity shall be made within 15 days and the settlement shall be negotiated by both parties. In case of arbitration, sampling for arbitration shall be conducted by both parties of supplier and buyer.

5.2 Lots

Product shall be submitted for inspection in lots, and each lot shall be produced from the same feed reaction.

5.3 Inspection items

For each lot of product, mass fraction of palladium, mass fraction of impurities, dilute sulfuric acid soluble test and appearance quality shall be carried out before delivery.

5.4 Sampling

5.4.1 Sampling for chemical content and solubility test: mix each group of products and take sample from different parts. The weight of each sample accounts 1-5 % for total products and it shall not less than 10 g, then apply the quartation method to divide sample to requirement amount.

5.4.2 The appearance of product shall be checked visually by bottle.

5.5 Inspection results

If the test results of palladium's mass fraction, appearance, impurities' mass fraction or dissolution test do not in conformity with this standard, judge the inspection lot as unqualified.

6 Marking, packaging, transportation, storage and quality certificate

6.1 Marking

The marking of inspection conformed product shall include the following:

- a) Name of provider;
- b) Name of product;
- c) Production lot;
- d) The quantity of product;

e) Date of manufacture.

6.2 Packaging, transportation and storage

6.2.1 Product shall be packaged in polypropylene or polyethylene bottle and sealed well. All bottles shall be put in wood or paper box and the packaging box shall be filled with paper scrap or polyfoam as buffer to avoid being loose.

6.2.2 Product can be transported by railway, highway or water way.

6.2.3 Product shall be placed in dry environment and avoid being wet.

6.3 Quality certification

Each lot of product shall be attached with quality certification which is followed by:

- a) Name, address, telephone and fax number of the provider;
- b) Name of product;
- c) Lot number;
- d) Quantity;
- e) Inspection result for all content and signet of technical supervision department;
- f) Serial number of this standard;
- g) Date of production.

7. Ordering (or contract) content

The order (or contract) for the products listed in this standard shall contain the following information:

- a) Name of product;
- b) The quantity of product;
- c) The number of this standard;
- d) Others.