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Replacing GB/T 4295-2008

Tungsten Carbide Powder

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Foreword

This Standard was drafted as per the rules specified in GB/T 1.1-2009.

This Standard replaced GB/T 4295-2008 *Tungsten Carbide Powder*. Compared with GB/T 4295-2008, the major technical changes of this Standard are as follows besides the editorial modifications:

- clarify that "this standard is applicable to tungsten carbide powder with an average particle size no less than 0.6 μ m for the production of cemented carbide and other powder metallurgy products" (see Clause 1 of this Edition; Clause 1 of the 2008 Edition);
- Modify the product designation; and divide tungsten carbide powder into 18 designations according to the average particle size (see 3.1 of this Edition; 3.1 of the 2008 Edition);
- Increase the content requirements of impurities, such as As, Bi, Cd, Co, Cr, Cu, Mn, Ni, P, Pb, Sb, Sn, Ti, V; and increase the content requirements of impurities, such as Ca, Fe, Mg, Mo, S, Si (see 3.2 of this Edition; 3.2 of the 2008 Edition);
- Add specific surface area requirements for three designations of FWC06-07, FWC07-08, and FWC08-10; modify the requirements for free carbon content, combined carbon content and oxygen content of some designations of tungsten carbide powder (see 3.3 of this Edition; 3.3 of the 2008 Edition).

This Standard was proposed by China Non-Ferrous Metals Industry Association.

This Standard shall be under the jurisdiction of National Technical Committee on Non-Ferrous Metals of Standardization Administration of China (SAC/TC 243).

Drafting organizations of this Standard: Zigong Cemented Carbide Co., Ltd.; Chongyi Zhangyuan Tungsten Co., Ltd.; Zhuzhou Cemented Carbide Group Co., Ltd.; Nanchang Cemented Carbide Limited Liability Company; and Central South University.

Chief drafting staffs of this Standard: Shu Jun, Zhang Huamin, Liao Jun, Shi Kaihua, Zhang Qiulin, Li Siyuan, Liang Hong, Wu Aihua, and Zeng Jie.

The historical editions replaced by this Standard are as follows:

- GB/T 4295-1984, GB/T 4295-1993, and GB/T 4295-2008.

Tungsten Carbide Powder

1 Scope

This Standard specifies the requirements, test methods, inspection rules, marking, packaging, transportation, storage, quality certificates and purchase orders (or contracts) for tungsten carbide powder.

This Standard applies to tungsten carbide powder with an average particle size no less than 0.6 μ m for the production of cemented carbide and other powder metallurgy products.

2 Normative References

The following documents are essential to the application of this Document. For the dated documents, only the versions with the dates indicated are applicable to this Document; for the undated documents, only the latest version (including all the amendments) is applicable to this Document.

GB/T 3249 Test method for fisher number of metal powders and related compounds

GB/T 4324 (all parts) Methods for chemical analysis of tungsten

GB/T 5124.1 Methods for chemical analysis of hard-metals - Determination of total carbon content - Gravimetric method

GB/T 5124.2 Methods for chemical analysis of hard-metals - Determination of insoluble (free) carbon content - Gravimetric method

GB/T 5314 Powders for powder metallurgical purposes - Sampling

GB/T 13390 Metallic powder - Determination of the specific surface area - Method of nitrogen adsorption

YS/T 559 Methods for emission spectrum analysis of tungsten

3 Requirements

3.1 Product classification

Tungsten carbide powder is divided into 18 designations according to the average particle size, such as FWC06-07, FWC07-08, FWC08-10, FWC10-15, FWC15-20, FWC20-25, FWC25-30,

4 Test Method

- 4.1** The main composition content is calculated by impurity reduction method.
- 4.2** The determination of impurity content shall be carried out according to the provisions of GB/T 4324 or YS/T 559; and the arbitration analysis method shall be carried out according to the provisions of GB/T 4324.
- 4.3** The determination of the average particle size shall be carried out in accordance with the provisions of GB/T 3249.
- 4.4** The determination of the specific surface area shall be carried out in accordance with the provisions of GB/T 13390.
- 4.5** The determination of the total carbon content shall be carried out according to the provisions of GB/T 5124.1; the determination of the free carbon content shall be carried out according to the provisions of GB/T 5124.2; and the combined carbon content shall be obtained by subtracting the free carbon content from the total carbon content. The determination of total carbon and free carbon contents can also be carried out according to the method negotiated between the supplier and the purchaser.
- 4.6** The determination of oxygen content shall be carried out according to the provisions of GB/T 4324.
- 4.7** Sieving shall be carried out in a manner agreed upon by both the supplier and the purchaser.
- 4.8** The appearance quality shall be inspected visually.

5 inspection Rules

5.1 Inspection and acceptance

- 5.1.1** The product shall be inspected by the quality supervision department of the supplier to ensure that the product quality complies with the provisions of this Standard; and fill in the product quality certificate.
- 5.1.2** The purchaser can inspect the received product according to the provisions of this Standard. If the inspection result is inconsistent with the provisions of this Standard, it shall be submitted to the supplier within 30 days from the date of receipt of the product, and the supplier and the purchaser can negotiate to resolve it. If arbitration is required, arbitration sampling shall be carried out jointly by both parties on the purchaser side.

5.2 Batching

The products shall be submitted for acceptance in batches; and each batch is composed of

"upward".

6.2 Packaging

The outer packaging of the product is in an iron drum; and the inner packaging is in a polyethylene plastic bag, which is tightly sealed. Or packaged in a method determined by both the supplier and the purchaser. The weight of each piece is determined through negotiation between the supplier and the purchaser.

6.3 Transportation

When the product is transported, it shall be protected from moisture and shall not be violently bumped.

6.4 Storage

The product shall be stored in a dry, ventilated, acid-base-free environment to prevent oxidation. The storage period should not exceed half a year.

6.5 Quality certificate

Each batch of products shall be accompanied by a product quality certificate stating:

- a) Name, address, zip code of the supplier;
- b) Product name and designation;
- c) Batch number;
- d) Net weight;
- e) The number of this Standard;
- f) Various analysis and inspection results and the seal of the quality supervision department;
- g) Inspector number;
- h) Date of inspection.

7 Order Form (or Contract) Content

The order form (or contract) shall include the following contents:

- a) Product name;
- b) Product designation;

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