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

GB/T 19076-2022

Specifications for sintered metal materials

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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 19076-2003 "Specification for Sintered Metal Materials". Compared with GB/T 19076-2003, except for structural adjustment and

In addition to editorial changes, the main technical changes are as follows.

- a) Added "Terms and Definitions" (see Chapter 3);
- b) Changed the content of "Sampling" (see Chapter 4, Chapter 3 of the.2003 edition);
- c) Changed the content of "Overview" (see 5.1, 4.1 of the.2003 edition);
- d) Changed the content of "chemical analysis" (see 5.2, 4.2 of the.2003 edition);
- e) Deleted "radial crush strength", "ultimate tensile strength" and "tensile yield strength" (see 4.4~4.6 of the.2003 edition);
- f) Changed the content of "mechanical properties" (see 5.4, 4.7 of the.2003 edition);
- g) Increased density, elongation, elastic modulus, Poisson's ratio, impact energy, compressive yield strength, transverse rupture strength, rotational bending fatigue strength Specifications for other performance tests such as hardness, plane bending fatigue strength, axial fatigue strength, apparent hardness, coefficient of linear expansion, etc. (see Chapter 6);
- h) Changed the content of "Specification" (see Chapter 7, Chapter 5 of the.2003 edition);
- i) Changed the content of "Material Grade" (see A.1, A.1 of the.2003 edition);
- j) Change "to be used" to "mixed alloy steel" (see A.4.1, A.4.1 of the.2003 edition);
- k) Changed the content of "Second Group" (see Appendix A.4.2, A.4.2 of the.2003 edition);
- l) Changed the content of the "third group" (see A.4.3, A.4.3 of the.2003 edition);

- m) Added "Cr=Chromium" (see A.5);
- n) Changed the content of "Example 7", added the content of "Example 8", and deleted the remarks (see A.6, A.6 of the.2003 edition);
- o) Added the content of "Bronze and bronze-graphite materials for bearings" (see B.1);
- p) Added remarks (see B.2);
- q) Change "1080°C" to "1083°C" (see B.4, B.4 of the.2003 edition);
- r) Change "pre-alloyed nickel-molybdenum-manganese steel for structural parts" to "pre-alloyed steel for structural parts" (see B.8, B.8 of the.2003 edition);
- s) Added the content of "mixed alloy steel" (see B.9);
- t) Change the content of "Table B.6 Iron-Based Materials for Structural Parts. Nickel Steel" to "Table 8 Iron-Based Materials for Structural Parts. Nickel Steel Sintered Condition" and "Table 9 Iron-based Materials for Structural Parts. Nickel Steel Heat Treated Condition" (see Table 8 and Table 9, Table B.6 of the.2003 edition);
- u) Change the content of "Table B.7 Iron-Based Materials for Structural Parts. Diffusion Alloyed Nickel-Copper-Molybdenum Steel" to "Table 10 Iron-Based Materials for Structural Parts" Material. Diffusion alloyed nickel-copper-molybdenum steel as sintered" and "Table 11 Iron-based materials for structural parts. diffusion alloyed nickel-copper-molybdenum steel thermal Processing state" (see Table 10 and Table 11, Table B.7 of the.2003 edition);
- v) Deleted Table B.8 and added the contents of Table 12, Table 13, Table 14 and Table 15 (see Table 12, Table 13, Table 14, Table 15,.2003 edition) of table B.8);
- w) In addition to the new table, other tables include the addition of grades and the modification of notes and descriptions.

This document is equivalent to ISO 5755.2012 "Specification for Sintered Metal Materials".

The following minimal editorial changes have been made to this document.

--- Modified the standard name.

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 specifies the chemical composition and physico-mechanical properties of sintered metallic materials used in the manufacture of bearings and structural parts.

Choose powder metallurgy

When it comes to gold materials, it is important to note that its properties depend not only on chemical composition and density, but also on the manufacturing process. sintered materials for specific applications,

Its properties are not necessarily the same as those of forged and cast materials used in other working conditions. Therefore, it is recommended that the purchaser contact the possible manufacturer.

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.

ISO 437 Steel and cast iron - Determination of total carbon content by combustion gravimetric method (Steelandcastiron-Determinationoftotal

ISO 1099 Axial force control method for fatigue testing of metallic materials (Metalicmaterials-Fatiguetesting-Axial

force-controlledmethod)

Note. GB/T 3075-2021 Axial force control method for fatigue test of metallic materials (ISO 1099.2017, MOD)

testing)

Note. GB/T 4337-2015 Rotational bending method for fatigue test of metallic materials (ISO 1143.2010, MOD)

ISO 2738 Sintered metallic materials (excluding cemented carbide) - Determination of density, oil content and open porosity of permeable sintered metallic materials

Note. GB/T 5163-2006 Sintered metal materials (excluding cemented carbide) Determination of density, oil content and open porosity of permeable sintered metal materials

(ISO 2738.1999, IDT)

Note. GB/T 6804-2008 Determination of Radial Crush Strength of Sintered Metal Bushings (ISO 2739.2006, MOD)

metals-Tensiletestpieces)

Note. GB/T 7963-2015 Sintered Metal Materials (Excluding Cemented Carbide) Tensile Specimens (ISO 2740.2009, IDT)

ISO 2795 Dimensions and tolerances of sintered bushings for plain bearings
(Plainbearings-Sinteredbushes-Dimensions

Note. GB/T 18323-2001 Dimensions and tolerances of sintered bushings for sliding bearings (ISO 2795.1991, IDT)

Note. GB/T 5319-2002 Determination of transverse rupture strength of sintered metal materials (excluding cemented carbide) (ISO 3325.1996, IDT)

metals-Fatiguetestpieces)