ICS 77.160
CCS H 72

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 10421-2025

Replacing GB/T 10421-2002

Sintered metal friction materials - Determination of density

烧结金属摩擦材料 密度的测定

Issued on: June 30, 2025 **Implemented on: January 1, 2026**

Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC

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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 for standardization documents" Drafting is required.

This document replaces GB/T 10421-2002 "Determination of density of sintered metal friction materials". Compared with GB/T 10421-2002, In addition to structural adjustments and editorial changes, the main technical changes are as follows.

a) The scope of application of this document has been changed (see Chapter 1, Chapter 1 of the 2002 edition);

b) Added a section on terms and definitions (see Chapter 3);

c) Added a principle chapter (see Chapter 4);

d) Added a chapter on reagents (see Chapter 5);

e) Added a chapter on instruments and equipment (see Chapter 6);

f) The accuracy requirements for analytical balances have been changed (see 6.1, 4.1 of the 2002 edition);

g) Added "maximum recommended diameter of hanging wire" (see Table 1);

h) The sample requirements have been changed (see Chapter 7, Chapter 3 of the 2002 edition);

i) The referenced standards have been changed (see 7.4, 3.4 of the 2002 edition);

j) Some expressions in the test procedures were changed (see Chapter 8, Chapter 4 of the 2002 edition);

k) Added a schematic diagram of the weighing device (see Figures 1 and 2);

l) Added "Density of distilled water in air (at standard atmospheric pressure)" (see Table 2);

m) The test results section was modified (see Chapter 9, Chapter 5 of the 2002 edition);

n) Added the precision section (see Chapter 10).

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

This document is proposed and coordinated by the China Machinery Industry Federation.

This document was drafted by: Hangzhou Advance Gearbox Group Co., Ltd., Huangshi Saifu Friction Material Co., Ltd., Beijing Youcai Bermuda AVIATION SUPPLY LIMITED.

The main drafters of this document are: Yang Shuiyu, Zhang Guohong, Lü Bo, Wang Xiufei, Yan Yan, Jiang Junyong, He Chen, Xu Chengfa, and Xu Kun.

This document was first published as GB/T 10421-1989 in 1989, first revised in 2002, and

this is the second revision.

Determination of density of sintered metal friction materials

1 Scope

This document describes the method for determining the density of sintered metal friction materials.

This document applies to the determination of the density of sintered metal friction materials without core plates.

2 Normative references

GB/T 3141-1994

GB/T 5163-2006

GB/T 8170

3 Terms and Definitions

There are no terms or definitions that require definition in this document.

4 Principles

Based on Archimedes' principle, the mass of a material sample is measured in air and in a liquid (distilled water) of known density.

Calculate the density of the material.

5.1 Impregnation reagents

The impregnation agent is oil or paraffin. The impregnation oil is mechanical oil with ISO viscosity grade 15 or 32 specified in GB/T 3141-1994.

The paraffin wax used for immersion is a liquid paraffin wax at 160 °C ~ 180 °C.

5.2 Liquids

The liquid can be distilled water or deionized water, and degassed water is recommended.

To prevent the surface from soaking, add a few drops of 0.05% (volume fraction) ~ 0.10% (volume fraction) wetting agent (sodium hexametaphosphate is recommended) to the water.

6.1 Analytical balance

With sufficient measuring range, the weighing accuracy reaches 0.01% of the sample

mass.