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

GB/T 38981-2020

Sintered-metal injection-moulded materials--Specifications

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Standardization Administration**

Table of Contents

Foreword

1 Scope

2 Normative references

3 Terms and definitions

Foreword

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

The translation method used in this standard is equivalent to ISO 22068.2012

"Specifications for Sintered Metal Injection Molding Materials".

The Chinese documents that have consistent correspondence with the normatively cited international documents in this standard are as follows.

---GB/T 228.1-2010 Metallic material tensile test Part 1.Room temperature test method (ISO 6892-1.2009,

MOD);

---GB/T 230.1-2018 Rockwell hardness test of metallic materials Part 1.Test method (ISO 6508-1.2016,

MOD);

---GB/T 3850-2015 Dense sintered metal material and cemented carbide density determination method (ISO 3369.2006, IDT);

---GB/T 4340.1-2009 Vickers hardness test of metallic materials Part 1.Test method (ISO 6507-1.2005,

MOD);

---GB/T 7963-2015 sintered metal materials (excluding cemented carbide) tensile specimens (ISO 2740.2009, IDT);

---GB/T 9097-2016 Determination of apparent hardness and microhardness of sintered metal materials (excluding cemented carbide) (ISO

4498.2010, IDT);

---GB/T 10125-2012 artificial atmosphere corrosion test salt spray test (ISO 9227.2006, IDT);

---GB/T 13012-2008 Measurement method of DC magnetic properties of soft magnetic materials (IEC 60404-4:2000, IDT).

This standard was proposed by China Nonferrous Metals Industry Association.

This standard is under the jurisdiction of the National Nonferrous Metals Standardization Technical Committee (SAC/TC243).

Drafting organizations of this standard. Shenzhen Zhucheng Technology Co., Ltd., Guangdong Institute of Materials and Processing, Zhejiang Xinhua Machinery Manufacturing Co., Ltd.

Limited company.

1 Scope

This standard specifies the chemical composition, mechanical and physical properties of sintered metal injection molding materials.

This standard applies to the selection of materials for design and materials engineers when using metal injection molding (MIM) processes to prepare parts.

This standard does not apply to structural parts produced by other powder metallurgy processes, such as pressing-sintering and powder forging technology.

2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this article

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

ISO 2740 Sintered metal materials (excluding cemented carbide) Tensile specimens (Sintered metal materials, excluding

hard metals-Tensile test pieces)

ISO 3369 Density determination of dense sintered metal materials and cemented carbide (Impermeable sintered metal materials

and hard metals-Determination of density)

ISO 4498 Sintered metal materials (excluding cemented carbide) Macro-hardness and micro-hardness determination (Sintered metal mate-

rials, excluding hard metals-Determination of apparent hardness and microhardness)

ISO 6507-1 Vickers hardness test of metallic materials Part 1. Test method (Metallic materials-Vickers

hardnesstest-Part 1.Testmethod)

ISO 6508-1 Rockwell Hardness Test of Metallic Materials Part 1.Test Method
(Metalicmaterials-Rockwelhard-

nesstest-Part 1.Testmethod)

ISO 6892-1 Tensile test of metallic materials Part 1.Room temperature test method
(Metalicmaterials-Tensile

testing-Part 1.Methodoftestatroomtemperature)

ISO 9227 artificial atmosphere corrosion test salt spray test
(Corrosiontestsinartificialatmospheres-Saltspray
tests)

IEC 60404-4 Magnetic Materials Part 4.DC Magnetic Performance Test Method for Soft
Magnetic Materials (Magneticmaterials-Part 4.

Methodsofmeasurementofd.c.magneticpropertiesofmagneticallysoftmaterials)

ASTMD2638 Standard Method for Determining the True Density of Calcined Petroleum
Coke by Helium Gas Densitometer (StandardTestMethodfor

RealDensityofCalcinedPetroleumCokebyHeliumPycnometer)

ASTMD4892 Standard Test Method for Density of Solid Hard Pitch (Helium Pycnometer
Method) [StandardTestMethodfor

DensityofSolidPitch(HeliumPycnometerMethod)]

3 Terms and definitions

The following terms and definitions apply to this document.

3.1

Tensile strength

R_m