

CCS H 16



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

GB/T 1481-2022

**Metallic powders, excluding powders for hardmetals -
Determination of compressibility in uniaxial compression**

Issued on: July 11, 2022

Implemented on: February 1, 2023

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

Table of Contents

foreword
1 Scope
2 Normative references
3 Terms and Definitions
4 symbols
5 Principles
6 Equipment
6.1 Mold

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 1481-2012 "Determination of compressibility of metal powders (excluding cemented carbide powders) in uniaxial pressing".

Compared with GB/T 1481-2012, except for structural adjustment and editorial changes, the main technical changes are as follows.

- a) Changed the allowable deviation of upper die punch and lower die punch (see Figure 1, Figure 2, Figure 1, Figure 2 of the.2012 edition);
- b) The accuracy of the balance is changed from "+/-0.01g" to "+/-0.001g" (see 6.3, 4.3 of the.2012 edition);
- c) The dimensional measurement accuracy is changed from "+/-0.01mm" to "+/-0.005mm" (see 6.4, 4.4 of the.2012 edition).

This document is equivalent to ISO 3927.2017 "Determination of compressibility of metal powders (excluding cemented carbide powders) in uniaxial pressing".

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 a method for determining the compressibility of metal powders

when subjected to uniaxial pressing in a closed mold under specified conditions.

This document does not apply to carbide powders.

2 Normative references

There are no normative references in this document.

3 Terms and Definitions

There are no terms and definitions that need to be defined in this document.

4 symbols

The following symbols apply to this document (see Table 1).

Table 1 Symbols

Symbol	Definition	Unit
ρ_P	Compressibility	g/cm ³
m	compact mass	g
V	compact volume	cm ³

a If the compressibility is measured at a single pressure, for example at 400N/mm², the symbol is written as $\rho_P(400)$.

5 Principles

The powder is uniaxially pressed with bidirectional pressure in a closed die. Powder samples can be pressed at a specified single pressure, or can be

Pressed under a specified set of pressures. After removing the compact from the mold, the density of the compact is measured.

Density values obtained at a single pressing pressure indicating the compressibility of the powder at a specified pressure; obtained at a set of pressing pressures

A set of density values can be used to draw the powder compressibility curve, that is, the relationship between density and pressing pressure.

6.1 Mold

The die material is made of hard alloy or tool steel, and the die punching is divided into cylindrical die punching and rectangular die punching. Cylindrical die punching can extrude a diameter of