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

**GB/T 9096-2025**

Replacing GB/T 9096-2002

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**Sintered metal materials, excluding hardmetals - Charpy impact  
test method**

烧结金属材料（不包括硬质合金）夏比冲击试验方法

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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.

This document replaces GB/T 9096-2002 "Sintered metal materials (excluding cemented carbide) impact test method" and GB/T 9096- Compared with 2002, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

- a) Delete "at room temperature" from the scope (see Chapter 1 of the 2002 edition);
- b) "impact absorbed energy" is changed to "absorbed energy" (see Chapter 1, Chapter 1 of the 2002 edition);
- c) The terms and definitions have been changed (see Chapter 3, Chapter 3 of the 2002 edition);
- d) Added "Test Principles" (see Chapter 4);
- e) The requirements for the testing machine energy specification of "30J/50J" and the impact speed of "3.0m/s~5.0m/s" have been deleted (see 5.1 of the 2002 edition);
- f) Added requirements for the use of pendulum (see 5.2);

g) Changed the requirements for measuring instruments (see 5.3, 5.2 of the 2002 edition);

h) The requirements for unnotched standard specimens have been changed, and unnotched small-size specimens, U-notched specimens, and other specifications of specimens have been added.

(See 6.2, 4.2 of the 2002 edition);

i) Deleted the chapter "Test Requirements" (see Chapter 6 of the 2002 edition);

j) Added a chapter on "Test Procedures" (see Chapter 7);

k) Added a chapter on "Uncertainty of Absorbed Energy K" (see Chapter 8);

l) The requirements in the "Test Report" have been changed (see Chapter 9, Chapter 8 of the 2002 edition).

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.

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The previous versions of this document and the documents it replaces are as follows.

- First published in 1988 as GB/T 9096-1988;
- First revised in 2002;
- This is the second revision.

Sintered metal materials (excluding cemented carbide) Charpy impact test method Safety precautions---This document does not specifically point out all safety issues. If there are any safety issues, they are also provided in combination with the usage situation.

It is the responsibility of the user of this document to establish appropriate safety and health protection measures and to determine the applicability of relevant regulations before use.

## 1 Scope

This document describes the Charpy impact test method for sintered metallic materials

(excluding cemented carbides).

This document is applicable to the determination of the absorbed energy of sintered metal specimens in the simply supported beam (Charpy) state when they break under a single impact load.

## 2 Normative references

GB/T 229-2020

GB/T 2975

GB/T 3808

GB/T 5318

GB/T 8170

GB/T 10623

JJG145

## 3 Terms and Definitions

The terms and definitions defined in GB/T 10623 apply to this document.

### 3.1 absorbed energy

The difference between the potential energy of the pendulum before impact and the residual energy of the cross section of the sample after fracture, and the wind resistance and friction loss have been compensated, Read out on the reading device.

[Source. GB/T 10623-2008, 6.1.1]

### 3.2 testpiecesupports

The part of the impact machine that provides the proper position for the impact specimen, involving the center of the pendulum impact, the impact hammer blade and the anvil.

NOTE. The support surface is perpendicular to the support surface of the anvil and the impact edge.

[Source. GB/T 10623-2008, 6.1.11]

## 4 Principles

Place the sample of specified geometric shape between the two sample supports of the testing machine, break the sample once with a pendulum, and measure the absorption of the sample.