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

GB/T 43602-2023

**Composition, structure and properties of PVD multi-layer hard
coatings**

物理气相沉积多层硬质涂层的成分、结构及性能评价

(English Translation)

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents" Drafting.

This document is equivalent to ISO 21874:2019 "Evaluation of composition, structure and performance of physical vapor deposition multi-layer hard coatings".

1 Scope

This document describes the evaluation of the composition, structure and properties of multi-layer hard coatings prepared by the commonly used physical vapor deposition (PVD) method.

This document applies to coating materials produced by vacuum deposition methods such as evaporation, sputtering or related non-chemical methods.

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, the dated quotations For undated referenced documents, only the version corresponding to that date applies to this

document; for undated referenced documents, the latest version (including all amendments) applies to this document.

ISO 4545-1 Knoop hardness test of metallic materials Part 1. Test method
(Metalicmaterials-Knoop hardnesstest-Part 1:Testmethod)

ISO 6507-1 Vickers hardness test of metallic materials Part 1. Test method
(Metalicmaterials-Vickershard-nesstest-Part 1:Testmethod)

ISO 9220 Metal coating thickness measurement scanning electron microscopy method
(Metaliccoatings-Measurementofcoating)

ISO 14577-1 Instrumented indentation testing of metallic materials for hardness and material parameters - Part 1. Test methods (Matalicma- Note: GB/T 21838.1-2019 Instrumented indentation test for hardness and material parameters of metallic materials Part 1: Test methods (ISO 14577-1. 2015, IDT)

ISO 20808 Fine ceramics (advanced ceramics, advanced industrial ceramics)
Determination of friction and wear characteristics of bulk ceramics using the ball-on-disk method

ISO 26423 Fine ceramics (advanced ceramics, advanced industrial ceramics)
Determination of coating thickness by pit grinding method [Fineceramics grindingmethod]

3 Terms and definitions

The following terms and definitions apply to this document.

The URLs for the terminology databases used in standardization work maintained by ISO and IEC are as follows:

---ISO online browsing platform. <https://www.iso.org/obp>;

4 Composition, structure and performance evaluation of coating samples

Samples for composition, structure and performance evaluation should be guaranteed to be coated in the same batch. Samples should be polished before coating processing