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Hardmetals - Metallographic determination of microstructure - Part 1: Photomicrographs and description (ISO 4499-1:2020)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 01/21

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English Version

Hardmetals - Metallographic determination of microstructure - Part 1: Photomicrographs and description (ISO 4499-1:2020)

Métaux-durs - Détermination métallographique de la
microstructure - Partie 1: Prises de vue
photomicrographiques et description (ISO 4499-
1:2020)

Hartmetalle - Metallographische Bestimmung der
Mikrostruktur - Teil 1: Gefügebilder und Beschreibung
(ISO 4499-1:2020)

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EN ISO 4499-1:2020 (E)

Contents	Page
European foreword.....	3

European foreword

This document (EN ISO 4499-1:2020) has been prepared by Technical Committee ISO/TC 119 "Powder metallurgy" in collaboration with Technical Committee CEN/SS M11 "Powder metallurgy" the secretariat of which is held by CCMC.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by February 2021, and conflicting national standards shall be withdrawn at the latest by February 2021.

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Endorsement notice

The text of ISO 4499-1:2020 has been approved by CEN as EN ISO 4499-1:2020 without any modification.

**INTERNATIONAL
STANDARD**

**ISO
4499-1**

Second edition
2020-07

**Hardmetals — Metallographic
determination of microstructure —**

**Part 1:
Photomicrographs and description**

*Métaux-durs — Détermination métallographique de la
microstructure —*

Partie 1: Prises de vue photomicrographiques et description



Reference number
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Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Apparatus	1
5 Preparation of testpiece section	2
6 Procedure	2
6.1 Metallographic preparation.....	2
6.1.1 General.....	2
6.1.2 Sectioning.....	2
6.1.3 Mounting.....	2
6.1.4 Grinding.....	3
6.1.5 Lapping.....	3
6.1.6 Polishing.....	3
6.1.7 Cleaning.....	4
6.2 Etching.....	4
6.2.1 General.....	4
7 Test report	8
Bibliography	9

ISO 4499-1:2020(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 119, *Powder metallurgy*, Subcommittee SC 4, *Sampling and testing methods for hardmetals*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/SS M11, *Powder metallurgy*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 4499-1:2008), which has been technically revised.

The main changes compared to the previous edition are as follows:

- in [Clause 2](#) and [6.1.4](#): reference to ISO 3878 has been removed;
- an apparatus ([4.3](#)) Electron Back Scatter Diffraction (EBSD) has been added;
- [3.3](#): “TaC” corrected.

A list of all parts in the ISO 4499 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Hardmetals — Metallographic determination of microstructure —

Part 1: Photomicrographs and description

1 Scope

This document specifies the methods of metallographic determination of the microstructure of hardmetals using photomicrographs.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 4499-2, *Hardmetals — Metallographic determination of microstructure — Part 2: Measurement of WC grain size*

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