

Hardmetals — Metallographic determination of microstructure

Part 1: Photomicrographs and description (ISO 4499-1:2008)

ICS 77.040.99; 77.160

National foreword

This British Standard is the UK implementation of EN ISO 4499-1:2010. It is identical to ISO 4499-1:2008. Together with BS EN ISO 4499-2:2010, it supersedes BS EN 24499:1993 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee ISE/65, Sintered metal components.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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English Version

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Métaux-durs - Détermination métallographique de la
microstructure - Partie 1: Prises de vue
photomicrographiques et description (ISO 4499-1:2008)

Hartmetalle - Metallographische Bestimmung der
Mikrostruktur - Teil 1: Gefügebilder und Beschreibung (ISO
4499-1:2008)

This European Standard was approved by CEN on 30 April 2010.

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Foreword

The text of ISO 4499-1:2008 has been prepared by Technical Committee ISO/TC 119 “Powder metallurgy” of the International Organization for Standardization (ISO) and has been taken over as EN ISO 4499-1:2010.

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of an identical text or by endorsement, at the latest by November 2010, and conflicting national standards shall be withdrawn at the latest by November 2010.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 24499:1993.

ISO 4499-1, together with ISO 4499-2, cancels and replaces ISO 4499:1978, which has been technically revised.

In ISO 4499-2, a new section has been added for the quantitative measurement of the WC grain size of hardmetals. ISO 4499-3 and ISO 4499-4 are additional parts that will deal with the microstructures of hardmetals containing cubic carbides and Ti (C, N)-based hardmetals, and miscellaneous microstructural features, such as defects and non-stoichiometric phases (e.g. carbon and eta-phase). ISO 4499-3 and ISO 4499-4 are currently in development.

In standard WC/Co hardmetals the density is generally controlled so that only two phases WC and Co are present. The Co phase is an alloy and contains some W and C in solid solution. The WC phase is stoichiometric. If the composition is either high or low in total carbon content then it is possible to see a third phase in the structure. For a high C content this is graphite; for a low C content it is eta phase (η), typically an M_6C or $M_{12}C$ carbide where M is (CoW). Metallographic determination of these phases will be outlined in ISO 4499-3.

ISO 4499 consists of the following parts, under the general title Hardmetals — Metallographic determination of microstructure:

— *Part 1: Photomicrographs and description*

— *Part 2: Measurement of WC grain size*

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Endorsement notice

The text of ISO 4499-1:2008 has been approved by CEN as a EN ISO 4499-1:2010 without any modification.

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