SLOVENSKI STANDARD
SIST-TS CEN ISO/TS 80004-11:2020

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Nanotehnologije - Slovar - 11. del: Nanoplast, nanopremaz, nanofilm in sorodni izrazi (ISO/TS 80004-11:2017)

Nanotechnologies - Vocabulary - Part 11: Nanolayer, nanocoating, nanofilm, and related terms (ISO/TS 80004-11:2017)

Nanotechnologien - Fachwörterverzeichnis - Teil 11: Nanoschicht, Nanobeschichtung, Nanofilm und verwandte Begriffe (ISO/TS 80004-11:2017)

Nanotechnologies - Vocabulaire - Partie 11: Nanocouche, nanorevêtement, nanofilm et termes associés (ISO/TS 80004-11:2017)

Ta slovenski standard je istoveten z: **CEN ISO/TS 80004-11:2020**

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CEN ISO/TS 80004-11

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English Version

Nanotechnologies - Vocabulary - Part 11: Nanolayer, nanocoating, nanofilm, and related terms (ISO/TS 80004-11:2017)

Nanotechnologies - Vocabulaire - Partie 11: Nanocouche, nanorevêtement, nanofilm et termes associés (ISO/TS 80004-11:2017)

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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European foreword

The text of ISO/TS 80004-11:2017 has been prepared by Technical Committee ISO/TC 229 "Nanotechnologies" of the International Organization for Standardization (ISO) and has been taken over as CEN ISO/TS 80004-11:2020 by Technical Committee CEN/TC 352 "Nanotechnologies" the secretariat of which is held by AFNOR.

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Endorsement notice

The text of ISO/TS 80004-11:2017 has been approved by CEN as CEN ISO/TS 80004-11:2020 without any modification.

TECHNICAL SPECIFICATION

ISO/TS 80004-11

First edition
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Nanotechnologies — Vocabulary —

Part 11: Nanolayer, nanocoating, nanofilm, and related terms

Nanotechnologies — Vocabulaire —

Partie 11: Nano-couche, nano-revêtement, nano-film et termes associés

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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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This document was prepared by Technical Committee ISO/TC 229, *Nanotechnologies*, in collaboration with IEC/TC 113, *Nanotechnology for electrotechnical products and systems*.

A list of all parts in the ISO/TS 80004 series can be found on the ISO website.

Introduction

Nanotechnologies are used in many application areas providing specific functionalities. Ordered structures are beginning to be used increasingly in applications such as layered coatings for protection of surfaces from wear, in which there can be multiple layers with individual layer thicknesses of just a few nanometres. Nanotextured surfaces are being developed where a patterned texture on the surface of a component can have a major influence on the properties of the component.

When discussing these applications of nanotechnologies, a common frame of reference for certain general terms is desirable. In general, a coating is applied to a substrate and is not discrete. In this regard, there is general agreement that a coating which is nanoscale in thickness should not be considered a nanoplate due to the integral relationship of the coating to the substrate. A film is freestanding or applied to a substrate, a layer can be internal or external and be single or multi-layer, a membrane is a film separating two phases.

Many different industries employ terms presented in this document. There are a number of relevant standards committees. In particular, the work of the following ISO committees is acknowledged:

— ISO/TC 35, Paints and varnishes;

NOTE Specific terms and definitions for paints and varnishes in the field of nanotechnologies are given in ISO 4618.

— ISO/TC 164/SC 3, Hardness testing (e.g. nano-indentation);

— ISO/TC 172/SC 3, Optical materials and components;

— ISO/TC 201, Surface chemical analysis;

— ISO/TC 202, Microbeam analysis;

— ISO/TC 256, Pigments, dyestuffs and extenders.

The terms “coating”, “layer”, “film” and other related terms can be grouped by distinguishing between coatings, layers and films having a thickness in the nanoscale (i.e. external dimension in the nanoscale) and those having internal structures in the nanoscale (e.g. nanostructured coatings, nanocomposite coatings, dispersion coatings with dispersed nano-objects, etc.). For the purposes of classification, following the hierarchy established in ISO/TS 80004-1 (which describes nanomaterial by the two categories “nano-objects” and “nanostructured material”),

— the terms “nanolayer”, “nanocoating”, and “nanofilm” are assigned to “nano-objects”, and

— the terms “nanostructured layers”, “coatings”, and “films” are assigned to nanostructured material.

See Figure 1 for details.