ICS 87.060.10 SLOVENSKÁ TECHNICKÁ NORMA November 2023

STN	**Funkčné pigmenty a plnivá na špeciálne použitie Časť 4: Nanorozmerový uhličitan titaničitý na fotokatalytické nanášanie (ISO 18473-4: 2022)**	**STN EN ISO 18473-4** 67 0575

Functional pigments and extenders for special applications - Part 4: Nanoscale titanium dioxide for photocatalytic application (ISO 18473-4:2022)

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. 10/23

Obsahuje: EN ISO 18473-4:2023, ISO 18473-4:2022

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 18473-4

July 2023

ICS 87.060.10

English Version

Functional pigments and extenders for special applications - Part 4: Nanoscale titanium dioxide for photocatalytic application (ISO 18473-4:2022)

Pigments et matières de charges fonctionnels pour applications spéciales - Partie 4: Dioxyde de titane à l'échelle nanométrique pour des applications photocatalytiques (ISO 18473-4:2022)

Funktionelle Pigmente und Füllstoffe für besondere Anwendungen - Teil 4: Titandioxid im Nanomaßstab für photokatalytische Zwecke (ISO 18473-4:2022)

This European Standard was approved by CEN on 16 July 2023.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

The text of ISO 18473-4:2022 has been prepared by Technical Committee ISO/TC 256 "Pigments, dyestuffs and extenders" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 18473-4:2023 by Technical Committee CEN/TC 298 "Pigments and extenders" the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by January 2024, and conflicting national standards shall be withdrawn at the latest by January 2024.

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Endorsement notice

The text of ISO 18473-4:2022 has been approved by CEN as EN ISO 18473-4:2023 without any modification.

INTERNATIONAL STANDARD

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Functional pigments and extenders for special applications —

Part 4: Nanoscale titanium dioxide for photocatalytic application

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Foreword

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This document was prepared by Technical Committee ISO/TC 256, *Pigments, dyestuffs and extenders*.

A list of all parts in the ISO 18473 series can be found on the ISO website.

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Introduction

Metal nanoparticles are promising materials as the heterogeneous catalyst in a variety of organic transformations. Their catalytic properties are functions of their size and crystal lattice parameters, and they show amazing levels of performance in terms of selectivity, activity and improved yield of products. In particular, nanoscale titanium dioxide (TiO_2) particles exhibited many special properties because the band gap of the nanoparticles increased with the decrease in size. The use of TiO_2 nanoparticles has received considerable attention in green synthetic organic chemistry, decomposition and removal of air and water contaminants, deodorization, and antibacterial, antifungal, self-cleaning and antifogging actions.

INTERNATIONAL STANDARD ISO 18473-4:2022(E)

Functional pigments and extenders for special applications —

Part 4:
Nanoscale titanium dioxide for photocatalytic application

1 Scope

This document specifies requirements and corresponding test methods for nanoscale titanium dioxide (TiO_2) in either powder or suspension form for photocatalytic application.

This document is applicable to modified nanoscale titanium dioxide for photocatalytic application.

NOTE Such modification can be surface treatment, coating, doping and combination thereof.

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 591-1:2000, *Titanium dioxide pigments for paints — Part 1: Specifications and methods of test*

ISO 787-2, *General methods of test for pigments and extenders — Part 2: Determination of matter volatile at 105 °C*

ISO 787-9, *General methods of test for pigments and extenders — Part 9: Determination of pH value of an aqueous suspension*

ISO 787-11, *General methods of test for pigments and extenders — Part 11: Determination of tamped volume and apparent density after tamping*

ISO 787-18, *General methods of test for pigments and extenders — Part 18: Determination of residue on sieve — Mechanical flushing procedure*

ISO 3262-1, *Extenders — Specifications and methods of test — Part 1: Introduction and general test methods*

ISO 6227, *Chemical products for industrial use — General method for determination of chloride ions — Potentiometric method*

ISO 9277, *Determination of the specific surface area of solids by gas adsorption — BET method*

ISO 15528, *Paints, varnishes and raw materials for paints and varnishes — Sampling*

ISO 18451-1, *Pigments, dyestuffs and extenders — Terminology — Part 1: General terms*

ISO 20814, *Nanotechnologies — Testing the photocatalytic activity of nanoparticles for NADH oxidation*

ISO 22197-1, *Fine ceramics (advanced ceramics, advanced technical ceramics) — Test method for air-purification performance of semiconducting photocatalytic materials — Part 1: Removal of nitric oxide*