
**Fine ceramics (advanced ceramics,
advanced technical ceramics) —
Test method for antialgal activity
of semiconducting photocatalytic
materials**

*Céramiques techniques — Méthode d'essai pour l'activité algicide des
matériaux photocatalytiques semi-conducteurs*

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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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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#).

The committee responsible for this document is ISO/TC 206, *Fine ceramics*.

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Introduction

Under ultraviolet (UV) light illumination, photocatalysts have diverse functions, such as prevention of fouling, antifogging effects, antibacterial effects, deodorization, and decomposition of air and water contaminants, and their applications have grown in recent years. Since products utilizing these photocatalytic functions are commercialized in large quantities, a method to evaluate and determine photocatalytic effects is required. This International Standard is intended to provide a method for objective evaluation of activity in controlling algae, which are a primary producer of microbial contamination (in the form of environmental biofilms) of outdoor structures, under illumination with ultraviolet light to simulate the outdoor environment and to contribute, via control of algae, to conservation of urban landscapes, prevention of member corrosion, and prevention of fouling of water tank window materials.

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Fine ceramics (advanced ceramics, advanced technical ceramics) — Test method for antialgal activity of semiconducting photocatalytic materials

1 Scope

This International Standard specifies a test method for evaluating anti-algal activities in outdoor structures, specifically flat photocatalytic materials (for example, window panes and water tank glasses, films, guardrails, etc.) under irradiation of ultraviolet light. It does not include powder, granular or porous photocatalytic materials.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 27447, *Fine ceramics (advanced ceramics, advanced technical ceramics) — Test method for antibacterial activity of semiconducting photocatalytic materials*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

photocatalyst

substance with many functions based on oxidization and reduction reactions under *photoirradiation* (3.3), including decomposition and removal of contaminants, deodorization, antibacterial actions, and prevention of fouling

3.2

photocatalytic materials

materials in which or on which the *photocatalyst* (3.1) is added by coating, impregnation, mixing, etc.

Note 1 to entry: Photocatalytic materials are to be used for building and road construction materials to obtain the above-mentioned functions.

3.3

photoirradiation

irradiation of UV light at wavelength 300 nm to 380 nm

3.4

antialgal activity

activity in suppressing growth of algae over a material surface

3.5

photocatalytic antialgal treatment

support of a *photocatalyst* (3.1) by means of various methods, including coating, impregnation, blending, and others, for utilization of the antialgal activity of a photocatalyst