Third edition
2022-06

Plastics — Determination of thermal conductivity and thermal diffusivity —

Part 2: Transient plane heat source (hot disc) method

Plastiques — Détermination de la conductivité thermique et de la diffusivité thermique —

Partie 2: Méthode de la source plane transitoire (disque chaud)

Reference number
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Foreword

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This document was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 5, *Physical-chemical properties,* in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 249, *Plastics,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 22007-2:2015), which has been technically revised.

The main changes are as follows:

— Figure 2 has been corrected;

— the term "penetration depth" (former 3.1) has been deleted;

— several Notes have been changed to body text;

— reference has been made in the main text to the theory of sensitivity coefficients.

A list of all parts in the ISO 22007 series can be found on the ISO website.

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Introduction

A significant increase in the development and application of new and improved materials for broad ranges of physical, chemical, biological, and medical applications has necessitated better performance data from methods of measurement of thermal-transport properties. The introduction of alternative methods that are relatively simple, fast, and of good precision would be of great benefit to the scientific and engineering communities[1].

A number of measurement techniques described as transient methods have been developed of which several have been commercialized. These are being widely used and are suitable for testing many types of materials. In some cases, they can be used to measure several properties separately or simultaneously[2],[3].

A further advantage of some of these methods is that it has become possible to measure the true bulk properties of a material. This feature stems from the possibility of eliminating the influence of the thermal contact resistance (see 8.1.1) that is present at the interface between the probe and the specimen surfaces[1],[3],[4],[5],[6].