BS ISO 14411-2:2020

BSI Standards Publication

Preparation of particulate reference materials

Part 2: Polydisperse spherical particles

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National foreword

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

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Part 2: Polydisperse spherical particles

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Partie 2: Particules sphériques polydispersées

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Foreword

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Introduction

The measurement of particle size distribution can be accomplished by a number of techniques which measure some characteristics of the particle and usually equate this to a circular or spherical equivalent. Each of these techniques measures different properties of an irregular particle and thus has particular requirements for reference materials and method standardization. Often, the methods that are employed for particle size distribution are indirect in nature which rely on measuring some other property and converting this to a particle size distribution by means of equations based on ideal shapes (usually spherical) and sizes to that of the equivalent particle size distribution. Thus, these techniques usually require or assume knowledge of some other constant in order to calculate the particle size distribution.

Even methods that do not require size calibration require reference materials for quality control and operation qualification. Such a reference material should be certified for its particle size distribution and the values should be traceable to the SI unit metre. This material allows instrument manufacturers to demonstrate proper calibration of all input factors and hence demonstrate that their instrument results are traceable to the SI unit metre. To achieve this, the reference material should be polydisperse and consist of spherical particles.

The heterogeneity of a particle size distribution poses statistical challenges for particle size analysis and therefore also for the production of reference materials for particle size analysis. This document therefore describes the production of particulate reference materials consisting of spherical particles.

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