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**Determination of particle size
distributions — Electrical sensing zone
method**

*Détermination des répartitions granulométriques — Méthode de la zone
de détection électrique*



Reference number
ISO 13319:2007(E)

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ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 13319 was prepared by Technical Committee ISO/TC 24, *Sieves, sieving, and other sizing methods*, Subcommittee SC 4, *Sizing by methods other than sieving*.

This second edition cancels and replaces the first edition (ISO 13319:2000), which has been technically revised.

This corrected version of ISO 13319:2007 incorporates the following corrections:

- in 8.10.1, paragraph 2, line 2, “[13]” has been deleted, and “[1], [12]” inserted;
- in E.2.4, the factor “ K_{da} ” has been added to the right hand side of Equation (E.1).

Determination of particle size distributions — Electrical sensing zone method

1 Scope

This International Standard gives guidance on the measurement of the size distribution of particles dispersed in an electrolyte solution using the electrical sensing zone method. The method measures pulse heights and their relationship to particle volumes or diameters, and it reports in the range from approximately 0,4 μm to approximately 1 200 μm . It does not address the specific requirements of the measurement of specific materials. However, guidance on the measurements of conducting materials such as porous materials and metal powders is given.

2 Normative references

The following referenced documents are indispensable for the application 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 787-10, *General methods of test for pigments and extenders — Part 10: Determination of density — Pyknometer method*

ISO 9276-2:2001, *Representation of results of particle size analysis — Part 2: Calculation of average particle sizes/diameters and moments from particle size distributions*

3 Terms and definitions

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

3.1

dead time

time during which the electronics are not able to detect particles due to the signal processing of a previous pulse

3.2

aperture

small-diameter hole through which suspension is drawn

3.3

sensing zone

volume of electrolyte solution within, and around, the aperture in which a particle is detected

3.3

sampling volume

volume of suspension that is analysed

3.4

channel

size interval