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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

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Particle characterization - Vocabulary

颗粒表征 术语

(English Translation)

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document identically adopts ISO 26824:2022 "Terminology for characterizing particle size of particulate systems".

The following minimal editorial changes have been made to this document.

---Added index.

Introduction

As particle characterization standards continue to increase, it is advisable to collect terms and definitions related to each standard and other standards and adjust them to a unified Nomenclature.

The application areas of particle and particle system characterization span mining and construction, pharmaceutical and food industries, medicine and life sciences, chemical industry, the development of international trade requires not only measurement equipment for particle characterization but also accurate terminology.

The quality and performance parameters of the particle system production and processing equipment must be comparable and comply with health, safety and environmental protection.

Regulations.

The terminology and expressions in this document are divided into items according to the sample preparation method, measurement result expression method or analysis method. Each terminology item begins it is a general term.

The entry title is the name of the technical field and the validity of the terms described is limited to this field.

The following terms appear in various entries.

---Particle size (3.1, 3.4~3.10, 3.12~3.15);

--- Particle shape (3.2, 3.8);

---Particle number concentration (3.5, 3.9 and 3.11);

---Pore diameter, pore volume (3.3);

---Surface area (3.3, 3.10);

--- Charge in aerosol (3.13);

---zeta potential in liquid dispersions (3.17);

---Liquid particle dispersion system (3.16).

The relevant definitions of data uncertainty are given in 3.1 and 3.11.

Particle Characterization Terminology

1 Scope

This document defines terms and definitions related to the characterization of particles and particle systems.

This document is applicable to the presentation of particle size analysis results, qualitative and quantitative description of particle shape and morphology, sample preparation, specific surface area and porosity characterization and various measurement methods for particle size distribution ranging from nanometers to millimeters (including sedimentation, classification, ultrasound, laser diffraction, dynamic light scattering, single particle optics, differential mobility analysis, image analysis and other methods).

2 Normative references

This document has no normative references.

3.1 Particle size characterization and classification analysis terminology

3.1.1

particle

Tiny particles of matter with well-defined physical boundaries.

Note 1: A physical boundary can also be considered an interface.

NOTE 2 The particles can move as a whole.

NOTE 3 This definition applies to nano-objects (3.1.7).

[Source. GB/T 25915.6-2010, 2.102, modified] 3.1.2 agglomerate the surface area of a multi-particle aggregate with weak or medium binding strength is similar to the sum of the surface areas of its individual particles.

Note 1: The forces supporting the aggregates are weak forces, such as van der Waals forces or simple physical entanglements.

NOTE 2 Agglomerates are also called secondary particles, while the original particles are called primary particles (3.1.4).

[Source. GB/T 32269-2015, 3.2, with modifications] 3.1.3 aggregate the surface area of a new particle formed by particles (3.1.1) that are strongly bound or fused together may be significantly smaller than the surface area of its individual particles.

sum.

Note 1: The forces supporting the aggregates are strong forces, such as covalent bonds or those resulting from sintering or complex physical entanglements, or other combinations of primary particles.

(3.1.4).

NOTE 2 Aggregates are also called secondary particles, while the original particles are called primary particles (3.1.4).

[Source. GB/T 32269-2015, 3.3, with modifications] 3.1.4 primary particle the original particles (3.1.1) that constitute agglomerates (3.1.2) and/or aggregates (3.1.3).

Note 1 to entry. The constituent particles (3.1.5) of agglomerates (3.1.2) or aggregates (3.1.3) in their natural state may be primary particles, but usually the constituent particles are aggregates.

Note 2 to entry. Agglomerates (3.1.2) and aggregates (3.1.3) are generally defined as secondary particles.