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Standard Terminology Relating to Sieves, Sieving Methods and Screening Media¹

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INTRODUCTION

Particle size analysis through the use of standard test sieves, and particle separation through the use of screening media, are commonly adopted methods of achieving desired process specifications related to particles. To ensure a better understanding of sizing and separation systems and processes and to ensure appropriate comparison of data, terminology common to the processes must be documented and defined.

For Subcommittee E29.01 on Sieves, Sieving Methods, and Screening Media, this is an on-going process of developing new related terms. Every effort has been made to ensure accuracy, precision, and clarity for the terms included. Suggestions and comments for additions, corrections, and revisions are welcomed.

1. Scope

1.1 This terminology includes all those terms used in all of the standards under the jurisdiction of Subcommittee E29.01. Terms are defined that are related to the manufacture of standard test sieves and screening media, as well as terms related to the methods, analysis, procedures and equipment for sizing and separating particles.

1.2 Committee E29 on Particle and Spray Characterization feels that it is essential to include terms and definitions explicit to the scope, regardless of whether the terms appear in existing ASTM standards. Terms that are in common usage and appear in common-language dictionaries are generally not included.

2. Referenced Documents

2.1 *ASTM Standards*:²

[ASTM STP 447B Manual on Testing Sieving Methods](#)

2.2 *ISO Standard*:³

[ISO 2395 Test Sieves and Test Sieving—Vocabulary.](#)

3. Significance and Use

3.1 This terminology contains terms used in the description and procedure of analysis of the size of particulate materials

¹ This terminology is under the jurisdiction of ASTM Committee E29 on Particle and Spray Characterization and is the direct responsibility of Subcommittee E29.01 on Sieves, Sieving Methods, and Screening Media.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

through sieve analysis with standard testing sieves and is applicable to the work of many ASTM technical committees. For a composite listing of published ASTM standards using standard testing sieves, refer to [ASTM STP 447B](#).

3.2 While some of the terms appearing in this terminology may also be used in the description, procedure, and end products of production screening (either on a batch-fed or continuous basis), it is the intent of this terminology to present the definitions and usage of terms strictly in the context of sieve analysis using standard testing sieves.

4. Terminology

4.1 Definitions:

agglomerate, *n*—two or more particles adhering together.

aperture size, *n*—the dimension defining an opening in a screening or sieving medium.

bulk density, *n*—the mass per unit volume of a material, including voids inherent in the material as tested.

cumulative oversize distribution graph, *n*—a graph obtained by plotting the total (cumulative) percentage by the mass retained on each of a set of sieves versus the corresponding aperture sizes.

cumulative undersize distribution graph, *n*—a graph obtained by plotting the total (cumulative) percentage by the mass passing each of a set of sieves versus the corresponding aperture sizes.

matched test sieve, *n*—a test sieve that reproduces the performance results of a calibration sieve within defined limits for a designated material.

median particle size, *n*—the particle size at which half the distribution (by mass, volume, number, etc.) is larger than and half smaller than the stated size.