



Designation: E 1617 – 97

Standard Practice for Reporting Particle Size Characterization Data¹

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INTRODUCTION

Correlation and comparison of particle size measurement data are of general importance to researchers, processors, suppliers, vendors, and users of particulate materials. Since there are numerous methods and devices in use, comparisons of size measurement data are subject to perceived inconsistencies that may be much reduced by the use of standardized reporting.

Data generated by any one size measurement method may be consistent in many respects, yet be troublesome to correlate due to variances in data processing and reporting formats among equipment manufacturers. Data generated from methods employing different physical principles present serious correlation problems due to their sensing of different parameters related to particle size and some unrelated, such as density, shape and optical properties. Standardized reporting may reduce confusion resulting from different particle size measurement practices.

1. Scope

1.1 This practice covers reporting particle size measurement data.

1.2 This practice applies to particle size measurement methods, devices, detail levels, and data formats for dry powders, and wet suspensions of solids, gels, or emulsion droplets. This practice does not pertain to liquid particles.

NOTE 1—For information on reporting liquid particle measurement data, refer to Practice E 799.

1.3 This practice does not concern particle concentration information.

1.4 This practice uses SI (Système International) units as standard. State all numerical values in terms of SI units unless specific instrumentation software reports particle size information, including percentiles, indices, and distributions as tabulations and graphs using alternate units. In this case, present both reported and equivalent SI units in the final written report. Refer to Practice E 380 for proper usage of SI units.

1.5 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*

E 177 Practice for Use of the Terms Precision and Bias in ASTM Test Methods²

E 380 Practice for Use of the International System of Units (SI)²

E 456 Terminology Relating to Quality and Statistics²

E 691 Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method²

E 799 Practice for Determining Data Criteria and Processing for Liquid Drop Size Analysis²

3. Significance and Use

3.1 When evaluating the particle size information, if the procedures of the data processing are not available, the user of the data must make assumptions concerning the reported data in the event of analytical inconsistencies. In order for different data sets to be compared it is crucial that the parties report the analytical techniques and methods or procedures for evaluating, calculating, compiling or otherwise processing the data to be reported.

3.2 Particle size characterization information can be reported in three levels of detail in order to satisfy user's needs.

3.2.1 Level 1 applies when only basic information about the material is required, and shall be provided with each shipment. This level represents the minimum information that shall be reported. Level 1 information may be sufficient in such cases as

¹ This practice is under the jurisdiction of ASTM Committee E-29 on Particle Size Measurement and is the direct responsibility of Subcommittee E29.02 on Subsieve Testing.

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² *Annual Book of ASTM Standards*, Vol 14.02.