Designation: D185 – 07 (Reapproved 2012)

Standard Test Methods for Coarse Particles in Pigments[1]

This standard is issued under the fixed designation D185; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the Department of Defense.

1. Scope

1.1 These test methods cover the determination of the amount of coarse particles in dry pigments.

1.2 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.3 *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:*[2]

E11 Specification for Woven Wire Test Sieve Cloth and Test Sieves

3. Significance and Use

3.1 In production of paints, smoothness of the paint film is of paramount importance. Agglomerates or coarse particles larger than 45 µm are difficult to disperse and may prevent obtaining a smooth film. These test methods are a valuable quality control test for grading raw materials.

4. Apparatus

4.1 The apparatus shall consist of a 200-mm (8-in.) 45-µm (No. 325) sieve conforming to Specification E11. An 8-in. 45-µm sieve for comparison purposes should be retained in the laboratory as a reference standard. Whenever a new sieve is secured, a practical test of its accuracy should be made by running on it and on the reference standard sieve a comparison test, using a pigment that has a considerable amount of coarse particles. A reserve stock of such a pigment should be kept for this purpose.

5. Procedure for Insoluble Dry Pigments, Except Metallic Aluminum and Bronze Powders

5.1 Weigh approximately 100 g of a pigment specimen to the nearest 0.1 g on an analytical balance. Wet the sieve on both sides with water and transfer the pigment to the sieve.

5.2 Hold the sieve under a tap delivering about 300 to 500 mL of the wash liquid (water) per minute. Slightly shake the sieve and move the stream of water around on the pigment in the sieve to get the pigment to pass through the sieve. Use a soft camel-hair brush to help the pigment wet out and pass through the sieve. If the sieve is held at a slight angle so that the pigment gradually collects at one edge during the washing process, and then rotated, the pigment may be brushed out rapidly, with no risk of clogging the sieve. Continue the water rinsing and brushing until no more pigment is passing through the sieve. This can be checked by tilting the sieve and inspecting the water passing through for pigment.

5.3 When pigment is no longer passing through the sieve, adjust the tap to a slow stream of water. Tilt the sieve and flow water through to collect the retained material in one place near the edge. Then tilt the sieve more so that the slow flow of water strikes the bottom of the screen and rinses out completely the retained particles into a 100 mL beaker. A squirt bottle may help with this transfer.

5.4 Allow the pigment to settle and then decant as much water as possible without losing pigment.

5.5 Place the beaker in a 105 ± 2°C oven until the contents are dry. Take care that no material is lost from the beaker by spattering. After drying, brush the contents of the beaker onto a piece of weighing paper and weigh to the nearest 0.001 g. Record the weight of retained material. Calculate the percentage of coarse particles.

6. Precision

6.1 Precision data are not available at this time. When available the appropriate precision statements will be added.

[1] These test methods are under the jurisdiction of ASTM Committee D01 on Paint and Related Coatings, Materials, and Applications and are the direct responsibility of Subcommittee D01.31 on Pigment Specifications.

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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.

7. Keywords

7.1 agglomerates; coarse particles; pigments