



Designation: D 716 – 86 (Reapproved 1999)

## Standard Test Methods for Evaluating Mica Pigment<sup>1</sup>

This standard is issued under the fixed designation D 716; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

### 1. Scope

1.1 These test methods cover the evaluation of mica pigment.

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 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:*

D 185 Test Methods for Coarse Particles in Pigments, Pastes, and Paints<sup>2</sup>

D 280 Test Methods for Hygroscopic Moisture (and Other Matter Volatile Under the Test Conditions) in Pigments<sup>2</sup>

E 11 Specification for Wire-Cloth Sieves for Testing Purposes<sup>3</sup>

### 3. Significance and Use

3.1 These test methods are used to determine apparent density of mica pigments and the grit level. This information is significant to the user of mica pigments for inclusion in coatings.

#### APPARENT DENSITY

### 4. Apparatus

4.1 *Volumeter*<sup>4</sup>—A Scott volumeter or similar apparatus modified as follows: The screen used shall conform to the requirements of a No. 40 (425- $\mu$ m) sieve as prescribed in Specification E 11. The funnel below the screen shall be replaced by a conical funnel having a bottom opening 1 in. (25

mm) in diameter. It may be found necessary to replace the top glass baffle with one that is longer to ensure that all of the sifted mica is caught.

### 5. Procedure

5.1 Transfer convenient quantities of the mica pigment to the funnel of the modified volumeter and brush the pigment through the screen with a camel-hair brush until the receiver is slightly more than full. Scrape off the excess and weigh the pigment. Care must be taken not to jar the apparatus during the procedure.

### 6. Calculation

6.1 Calculate the apparent density of the mica pigment and convert to pounds per cubic foot.

### 7. Report

7.1 Report the mean of three determinations as the apparent density of the mica pigment.

### 8. Reproducibility of Results

8.1 The mean of the three determinations should check within 5 %.

#### MOISTURE AND OTHER VOLATILE MATTER

### 9. Procedure

9.1 Determine the moisture and other volatile matter in accordance with Test Methods D 280.

#### GRIT

### 10. Apparatus

10.1 *Beaker*, 600-mL, low-form.

10.2 *Metal Tubing*—An L-shape metal tube (Fig. 1) 6.4 mm ( $\frac{1}{4}$ in.) in outside diameter with a foot 25 mm (1 in.) in length. The foot of the tube shall be drilled to 4.4 mm (0.173 in.) (No. 17 drill) in inside diameter for a depth of 12.7 mm ( $\frac{1}{2}$  in.). The tube shall be placed in the beaker with the long arm in the vertical position, and the foot of the L parallel to the bottom of the beaker and perpendicular to the radius of the bottom at a point such that there is about 1.5-mm ( $\frac{1}{16}$ -in.) clearance between the tubing and both the bottom and side of the beaker. The center of the foot shall be placed 90° from the lip of the beaker.

<sup>1</sup> These test methods are under the jurisdiction of ASTM Committee D-1 on Paint and Related Coatings, Materials, and Applications and are the direct responsibility of Subcommittee D01.31 on Pigment Specifications.

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<sup>2</sup> *Annual Book of ASTM Standards*, Vol 06.03.

<sup>3</sup> *Annual Book of ASTM Standards*, Vol 14.02.

<sup>4</sup> The volumeter is no longer generally available. As of June 1986 only one supplier, Sargent Welch Co., Skokie, IL, was known. The device is Scott-Schaeffer and White Volumeter listed on p. 932 of Catalog No. 133 (1985–86).