Designation: D2698 – 05 (Reapproved 2022)

Standard Test Method for
Determination of the Pigment Content of Solvent-Reducible Paints by High-Speed Centrifuging[1]

This standard is issued under the fixed designation D2698; 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 U.S. Department of Defense.

1. Scope

1.1 This test method covers the separation of pigment from solvent-reducible paints and the calculation of the percent pigment from the results of nonvolatile determinations on the total paint and the separated vehicle.

NOTE 1—This test method has been proven to be applicable to most solvent-reducible paints, the exception being those paints containing severely bleeding pigments or pigments such as carbon black that are very difficult or impossible to centrifuge.

1.2 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]
D2369 Test Method for Volatile Content of Coatings

3. Significance and Use

3.1 This test method describes a rapid method for separating pigment from solvent-reducible paints.

3.2 This test method is used by paint producers and consumers for product acceptance and process control.

4. Apparatus

4.1 *Laboratory Centrifuge,* capable of developing 32 000 *g* or higher.[3]

5. Procedure

5.1 Shake the sample for 10 min on a mechanical shaker, stir with a paddle to loosen any caked pigment, and shake again for 10 min. If necessary, repeat until there are no lumps present and the sample is thoroughly mixed.

5.2 Add the mixed paint to the centrifuge container until sufficient paint is added to permit the recovery of 25 mL minimum of clear vehicle. Revolve the bowl at 32 000 *g* or higher for 15 min or until a clear vehicle is obtained.

5.3 Transfer the vehicle carefully, so as not to dislodge any of the pigment from the walls, into a jar that is immediately capped to prevent any solvent losses by evaporation. Use this vehicle for the determination of the nonvolatile content of the separated vehicle.

6. Percent Paint and Vehicle Solids

6.1 Determine the percent nonvolatile content of the original paint and the separated vehicle in accordance with Test Method D2369.

7. Calculation

7.1 Calculate the weight percent pigment of paint, *P*, as follows:

$$P = (A - B) \times 100/100 - B \qquad (1)$$

[3] A supercentrifuge or a centrifuge equipped with a high-speed head have been found satisfactory for this purpose. Any centrifuge capable of developing 32 000 *g* and having facilities for sealing the specimen to prevent solvent loss should also prove to be satisfactory.

To calculate the gravities developed by a particular centrifuge use the following calculation:

$$g = \text{rotating radius, cm} \times \text{r/min}^2 \times 1.118 \times 10^{-5}$$