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Standard Guide for Testing Latex Vehicles[1]

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1. Scope

1.1 This guide covers methods suitable for testing latex vehicles. Certain of these methods were developed expressly for testing latex vehicles (Table 1). Others were developed for testing or analyzing formulated water- or solvent-based coatings but would be equally applicable for testing latices.

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

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D562 Test Method for Consistency of Paints Measuring Krebs Unit (KU) Viscosity Using a Stormer-Type Viscometer

D1417 Test Methods for Rubber Latices—Synthetic

D1475 Test Method For Density of Liquid Coatings, Inks, and Related Products

D2196 Test Methods for Rheological Properties of Non-Newtonian Materials by Rotational Viscometer

D2354 Test Method for Minimum Film Formation Temperature (MFFT) of Emulsion Vehicles

D2369 Test Method for Volatile Content of Coatings

D3168 Practice for Qualitative Identification of Polymers in Emulsion Paints

D3792 Test Method for Water Content of Coatings by Direct Injection Into a Gas Chromatograph

D3925 Practice for Sampling Liquid Paints and Related Pigmented Coatings

D4017 Test Method for Water in Paints and Paint Materials by Karl Fischer Method

D4758 Test Method for Nonvolatile Content of Latexes (Withdrawn 2007)[3]

E70 Test Method for pH of Aqueous Solutions With the Glass Electrode

3. Latex Sampling Methods

3.1 Practice D3925 describes sampling procedures for formulated (pigmented) coatings that are equally applicable to latex vehicles.

4. Nonvolatile Content

4.1 Test Method D2369 has been found suitable for the determination of the volatile content of many latex vehicles. Nonvolatile content is obtained by subtracting the results from 100.

NOTE 1—Determinations of the volatile content using a shorter bake time than the 60 min recommended in Test Method D2369 should be noted in the report of the results.

4.2 The nonvolatile content of latexes may also be determined for quality control purposes with Test Method D4758 which specifies baking at 180°C for 20 min, conditions selected to allow completion of testing in 1 h or less. For latex vehicles used in certain air-dry or low temperature bake coatings, as well as for those that contain temperature-sensitive materials, the use of the milder test conditions of Test Method D2369 (see 4.1) will more accurately reflect the effective nonvolatile content.

4.2.1 Test Method D4758 is not intended to be employed for determining the volatile organic content (VOC) of formulated coatings.

5. Minimum Film Formation Temperature (MFT)

5.1 The MFT is the lowest temperature at which a latex will form a continuous film. Test Method D2354 employs drawdown application of the test latex on a substrate over which a temperature gradient has been established. The lowest temperature at which the latex is converted into a clear, continuous film corresponds to the minimum film formation temperature.

[1] This guide is under the jurisdiction of ASTM Committee D01 on Paint and Related Coatings, Materials, and Applications and is the direct responsibility of Subcommittee D01.33 on Polymers and Resins.

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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] The last approved version of this historical standard is referenced on www.astm.org.

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