Designation: D1978 – 91 (Reapproved 2018)

Standard Guide for Analysis of Electrocoat Bath Samples[1]

This standard is issued under the fixed designation D1978; 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.

1. Scope

1.1 This guide covers the selection of test methods for determination of the important parameters that affect the performance of electrocoating paints.

1.2 The test methods involved are D4370, D4399, D4584, and D5145.

1.3 *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]

D4370 Test Methods for Acid and Base Milliequivalent Content of Electrocoat Bath

D4399 Test Method for Measuring Electrical Conductivity of Electrocoat Baths

D4584 Test Method for Measuring Apparent pH of Electrocoat Baths

D5145 Test Methods for Nonvolatile and Pigment Content of Electrocoat Baths

3. Significance and Use

3.1 This guide indicates test procedures recommended for the maintenance of acceptable performance of the paint in an electrocoating bath. Several critical parameters must be determined throughout the operation of the bath. These parameters must be adjusted when deviations from the norm occur.

3.2 The test methods for electrocoat baths are unique, as the aqueous samples have a nonvolatile content between 8 and 25 %. Constant agitation must be present when the samples are taken and during the measurement of some of the parameters.

4. Test Methods

4.1 *Acid and Base Content*—Test Methods D4370 covers the determination of acid and base milliequivalent content of electrocoat baths.

4.2 *Electrical Conductivity*—Test Method D4399 describes the determination of the electrical conductivity of electrocoat baths.

4.3 *pH Determination*—Test Method D4584 describes the measurement of the apparent pH of paints and ultrafiltrates of electrocoat baths.

4.4 *Nonvolatile and Pigment Content*—Test Method D5145 covers the determination of nonvolatile and inorganic pigment content of electrocoat baths.

5. Precision

5.1 The referenced test methods have precision limits listed. Reference to the individual standards for precision statements is recommended.

6. Keywords

6.1 electrical conductivity; electrocoat baths; nonvolatile content; pH; pigment content

[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 D01.21 on Chemical Analysis of Paints and Paint Materials.

Current edition approved June 1, 2018. Published June 2018. Originally approved in 1991. Last previous edition approved in 2012 as D1978 – 91 (2012). DOI: 10.1520/D1978-91R18.

[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.