



Designation: **D1978 – 91 (Reapproved 2008) D1978 – 91 (Reapproved 2014)**

## Standard Guide for Analysis of Electrocoat Bath Samples<sup>1</sup>

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 ( $\epsilon$ ) 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**.

### 2. Referenced Documents

2.1 *ASTM Standards*:<sup>2</sup>

**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.

<sup>1</sup> 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 Feb. 1, 2008; July 1, 2014. Published February 2008; July 2014. Originally approved in 1991. Last previous edition approved in 2002 as **D1978 – 91 (2002)**; **D1978 – 91 (2008)**. DOI: ~~10.1520/D1978-91R08~~ 10.1520/D1978-91R14.

<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.