



Standard Test Methods for Use of Emulsion Polymers in Floor Polishes¹

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1. Scope

1.1 These test methods cover test procedures for emulsion polymers that are used in water-based floor polishes. The term “emulsion polymers” is used primarily to denote those materials produced by regular emulsion polymerization techniques, but may be extended to those polymers that are subsequently emulsified or dispersed after polymerization. Unless otherwise noted, the tests may be used for any polymer or copolymer systems. The methods appear in the following order:

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1.2 *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:

E 1 Specification for ASTM Thermometers²

E 70 Test Method for pH of Aqueous Solutions with the Glass Electrode³

E 100 Specification for ASTM Hydrometers²

3. Significance and Use

3.1 The purpose of this test is not to fully identify and characterize a polymer, but to identify a variety of basic parameters needed to predetermine the usefulness of the polymer in formulations as well as for Quality Control purposes.

3.2 A statement of precision and accuracy is not appropriate in this case.

4. Sampling

4.1 *Outline of Test Method*—Since stratification may occur in emulsion polymers, they must be thoroughly agitated to obtain a homogeneous blend as a representative sample. The procedure required differs with the type of container and facilities available.

4.2 *Sampling from Tank Cars*—Take three samples of at least 1 pt (473 mL) each, one at the center of the tank, another half way between the center and the bottom, and the third half way between the center and the top. Take the top sample first, then the center sample, and the bottom sample last. Use a weighted sampler with a remotely operated, removable top, or other suitable sampling device that will accomplish the same results. Determine the applicable specified or characteristic properties of the samples by the standard procedures or methods. If there is any evidence that stratification has occurred, then thoroughly agitate the contents of the car until samples obtained agree within 1 % of total solids.

4.3 Sampling from Drums:

4.3.1 *Blending of Contents*—Blend the emulsion polymer by one of the following methods:

4.3.1.1 *Method A*—If the drum is fitted with a bung and contains 2 % air space, lay it on its side and roll to and fro briskly for not less than 10 min. Then turn the drum upside down for about 15 min and repeat the rolling operation for an additional 10 min. If the drum contains less than 2 % air space, transfer the contents to a larger vessel and thoroughly stir, preferably by means of a perforated steel disk plunger. Stirring for about 10 min will normally suffice.

4.3.1.2 *Method B*—Agitate the contents of the drum by means of a suitable motor-driven stirrer for as long as is necessary to obtain uniformity. Excessive stirring and unnecessary exposure of the emulsion polymer to air must be avoided. A suitable type of stirrer consists of a collapsible two-bladed stainless steel propeller of 110-mm minimum diameter, when fully opened, mounted on a stainless steel shaft sufficiently long for the propeller to be distant about one quarter the height of the emulsion polymer from the bottom of the drum. Operate stirrer at a minimum speed of 900 rpm. If desired, two propellers may be used on the same shaft, the lower one being near the end of the shaft. The shaft speed shall give a brisk turnover without creating a vortex. The part of the equipment immersed in the emulsion polymer must contain no copper or brass.

4.3.2 *Removal of Sample*—After blending, take the sample

¹ These test methods are under the jurisdiction of ASTM Committee D-21 on Polishes, and are the direct responsibility of Subcommittee D 21.03 on Chemical and Physical Testing.

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² *Annual Book of ASTM Standards*, Vol 14.03.

³ *Annual Book of ASTM Standards*, Vol 15.05.