



Standard Test Method for Hydroquinone in Vinyl Acetate¹

This standard is issued under the fixed designation D2193; 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 test method covers the determination of hydroquinone in the range from 1 to 20 ppm in refined, commercially available, vinyl acetate.

1.2 For purposes of determining conformance of an observed or a calculated value using this test method to relevant specifications, test result(s) shall be rounded off “to the nearest unit” in the last right-hand digit used in expressing the specification limit, in accordance with Practice E29.

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

1.4 *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.*

1.5 For hazard information and guidance, see the supplier’s Material Safety Data Sheet.

2. Referenced Documents

2.1 *ASTM Standards:*²

D1193 Specification for Reagent Water

E29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications

3. Summary of Test Method

3.1 The vinyl acetate is evaporated at room temperature in a stream of inert gas or clean air to minimize the loss of hydroquinone by evaporation. The hydroquinone is dissolved in water and titrated with dilute standardized ceric acid sulfate using diphenylamine as indicator.

¹ This test method is under the jurisdiction of ASTM Committee D01 on Paint and Related Coatings, Materials, and Applications and is the direct responsibility of Subcommittee D01.35 on Solvents, Plasticizers, and Chemical Intermediates.

Current edition approved June 1, 2006. Published June 2006. Originally approved in 1963. Last previous edition approved in 2001 as D2193 – 97 (2001). DOI: 10.1520/D2193-06.

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.

4. Significance and Use

4.1 This test method provides a measurement of inhibitor level in vinyl acetate. The results of these measurements can be used for specification acceptance.

5. Apparatus

5.1 *Buret*, 25-mL, graduated in 0.1-mL subdivisions.

5.2 *Beakers*, 50 and 600-mL capacity.

5.3 *Volumetric Flask*, 1000-mL capacity.

5.4 *Erlenmeyer Flasks*, 100 and 250-mL capacity.

5.5 *Nitrogen Cylinder*, or source of clean air.

5.6 *Pipets*, 10 and 50-mL capacity.

6. Reagents

6.1 *Purity of Reagents*—Reagent grade chemicals shall be used in all tests. Unless otherwise indicated, it is intended that all reagents shall conform to the specifications of the Committee on Analytical Reagents of the American Chemical Society, where such specifications are available.³ Other grades may be used provided it is first ascertained that the reagent is of sufficiently high purity to permit its use without lessening the accuracy of the determination.

6.2 *Purity of Water*—Unless otherwise indicated, references to water shall be understood to mean reagent water conforming to Type IV of Specification D1193.

6.3 *Ceric Acid Sulfate, Standard Solution (0.002 N)*—Dissolve 1.096 g of ceric ammonium nitrate ((NH₄)₂Ce(NO₃)₆) in 28.0 mL of concentrated sulfuric acid (H₂SO₄, sp gr 1.84) contained in a 50-mL beaker. Slowly pour the ceric solution, while stirring, into 200 mL of water contained in a 600-mL beaker. When solution is complete, transfer this mixture to a 1000-mL volumetric flask and dilute to the mark with water.

³ *Reagent Chemicals, American Chemical Society Specifications*, American Chemical Society, Washington, DC. For suggestions on the testing of reagents not listed by the American Chemical Society, see *Analar Standards for Laboratory Chemicals*, BDH Ltd., Poole, Dorset, U.K., and the *United States Pharmacopeia and National Formulary*, U.S. Pharmacopeial Convention, Inc. (USPC), Rockville, MD.

*A Summary of Changes section appears at the end of this standard