Designation: D3125 – 06

Standard Test Method for Monomethyl Ether of Hydroquinone in Colorless Monomeric Acrylate Esters and Acrylic Acid[1]

This standard is issued under the fixed designation D3125; 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 monomethyl ether of hydroquinone[2] (MEHQ) in colorless monomeric acrylate esters and acrylic acid. The test method is applicable to the determination of MEHQ in the concentration range from 0 to 1200 parts per million.

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 the rounding-off method of 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 For hazard information and guidance, see the supplier's Material Safety Data Sheet.

1.5 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of whoever uses this standard to consult and establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.* Specific precautionary statements are given in Section 8.

2. Referenced Documents

2.1 *ASTM Standards:*[3]

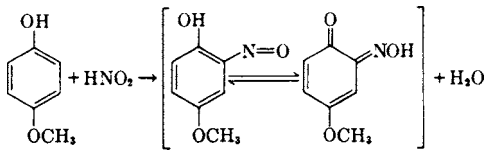
D1193 Specification for Reagent Water

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

E180 Practice for Determining the Precision of ASTM Methods for Analysis and Testing of Industrial and Specialty Chemicals (Withdrawn 2009)[4]

3. Summary of Test Method

3.1 As shown in the equation, MEHQ reacts with nitrous acid (sodium nitrite in acidic media) to form the nitroso derivative which equilibrates between two structures.



3.2 The yellow color of the nitroso compound is measured spectrophotometrically at a wavelength of 420 nm.

4. Significance and Use

4.1 Acrylic acid and its esters are normally inhibited with MEHQ only. This procedure presents a rapid and accurate method of determining the MEHQ content of fresh acrylic acid and acrylate esters in the absence of other inhibitors.

4.2 MEHQ effectiveness may decline with age and this decline in effectiveness may not be indicated by this test method.

5. Interferences

5.1 Hydroquinone (HQ), thiodiphenylamine, diphenylphenylene-diamine and *p*-hydroxydiphenylamine interfere if present.

6. Apparatus

6.1 *Spectrophotometer,* with borosilicate-glass cells for determining absorbance at 420 nm.

6.2 *Volumetric Flasks,* 50 and 100-mL capacity.

6.3 *Measuring Pipets,* 5 and 10-mL capacity.

7. Reagents

[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.

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[2] IUPAC-approved name is 4-methoxyphenol.

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

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