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.

Designation: D7504 – 20

Standard Test Method for Trace Impurities in Monocyclic Aromatic Hydrocarbons by Gas Chromatography and Effective Carbon Number[1]

This standard is issued under the fixed designation D7504; 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 total nonaromatic hydrocarbons and monocyclic aromatic hydrocarbons in benzene, toluene, ethylbenzene, *p*-xylene, *o*-xylene, styrene and mixed xylenes by gas chromatography. The purity of benzene, toluene, ethylbenzene, *p*-xylene, *o*-xylene, styrene and mixed xylenes is also calculated. Similar test methods, using the internal standard calibration technique and the external standard calibration technique, are Test Methods D2360, D3797, D4492, D5060, D5135, D5917, and D6563 respectively.

1.2 The limit of detection (LOD) is 0.0002 mass % and limit of quantitation (LOQ) is 0.0006 mass % for impurities in toluene, mixed xylenes, *p*-xylene, *o*-xylene, ethylbenzene, benzene, and styrene.

1.3 In determining the conformance of the test results using this method to applicable specifications, results shall be rounded off in accordance with the rounding-off method of Practice E29.

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

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 the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.6 *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]

D1555M Test Method for Calculation of Volume and Weight of Industrial Aromatic Hydrocarbons and Cyclohexane [Metric]

D2360 Test Method for Trace Impurities in Monocyclic Aromatic Hydrocarbons by Gas Chromatography (Withdrawn 2016)[3]

D3437 Practice for Sampling and Handling Liquid Cyclic Products

D3797 Test Method for Analysis of *o*-Xylene by Gas Chromatography (Withdrawn 2014)[3]

D4492 Test Method for Analysis of Benzene by Gas Chromatography (Withdrawn 2018)[3]

D4790 Terminology of Aromatic Hydrocarbons and Related Chemicals

D5060 Test Method for Determining Impurities in High-Purity Ethylbenzene by Gas Chromatography

D5135 Test Method for Analysis of Styrene by Capillary Gas Chromatography

D5136 Specification for High Purity *p*-Xylene

D5211 Specification for Xylenes for *p*-Xylene Feedstock

D5917 Test Method for Trace Impurities in Monocyclic Aromatic Hydrocarbons by Gas Chromatography and External Calibration

D6563 Test Method for Benzene, Toluene, Xylene (BTX) Concentrates Analysis by Gas Chromatography (Withdrawn 2018)[3]

D6809 Guide for Quality Control and Quality Assurance Procedures for Aromatic Hydrocarbons and Related Materials

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

E260 Practice for Packed Column Gas Chromatography

E355 Practice for Gas Chromatography Terms and Relationships

[1] This test method is under the jurisdiction of ASTM Committee D16 on Aromatic, Industrial, Specialty and Related Chemicals and is the direct responsibility of Subcommittee D16.01 on Benzene, Toluene, Xylenes, Cyclohexane and Their Derivatives.

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[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.

[3] 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

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