



Designation: D2121 – 23

Standard Test Methods for Polymer Content of Styrene Monomer¹

This standard is issued under the fixed designation D2121; 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 These test methods cover the determination of the polymer content of styrene monomer. It should be noted, however, that dimers and trimers are not measured by these test methods.

1.2 *Test Method A*, which is based on the use of a spectrophotometer or photometer, is intended for the quantitative determination of the polymer content of styrene monomer in concentrations up to 15 mg/kg. Samples containing more than 15 mg/kg of polymer must be suitably diluted before measurement. The limit of detection (LOD) is 1.2 mg/kg and the limit of quantitation (LOQ) is 4.0 mg/kg. LOD and LOQ were calculated using the last sample in [Table 1](#).

1.3 *Test Method B* is a rapid visual procedure that is intended for the approximate evaluation of polymer to a maximum concentration of 1.0 mass %. Samples having a polymer content of 1.0 mass % or greater should be suitably diluted prior to measurement.

1.4 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](#).

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

1.6 *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.* For specific hazard statements, see Section 9.

1.7 *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 Recom-*

mendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.

2. Referenced Documents

2.1 ASTM Standards:²

[D2827](#) Specification for Styrene Monomer

[D3437](#) Practice for Sampling and Handling Liquid Cyclic Products

[D4790](#) Terminology of Aromatic Hydrocarbons and Related Chemicals

[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

[E691](#) Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method

2.2 Other Document:

[OSHA Regulations](#), 29CFR paragraphs 1910.1000 and 1910.1200³

3. Terminology

3.1 See Terminology [D4790](#) for definition of terms used in this test method.

TEST METHOD A—DETERMINATION OF POLYMER IN STYRENE MONOMER SPECTROSCOPIC METHOD

4. Summary of Test Method

4.1 This test method utilizes the fact that polymers present in the monomers are insoluble in methanol. The polymer content of styrene monomer is determined by measurement of the degree of turbidity produced by the addition of dry methanol to the styrene sample.

¹ These test methods are under the jurisdiction of ASTM Committee [D16](#) on Aromatic, Industrial, Specialty and Related Chemicals and are the direct responsibility of Subcommittee [D16.07](#) on Styrene, Ethylbenzene and C9 and C10 Aromatic Hydrocarbons.

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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 Available from U.S. Government Printing Office Superintendent of Documents, 732 N. Capitol St., NW, Mail Stop: SDE, Washington, DC 20401, <http://www.access.gpo.gov>.

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