



Designation: D 2121 – 00

Standard Test Methods for Polymer Content of Styrene Monomer and AMS (α -Methylstyrene)¹

This standard is issued under the fixed designation D 2121; 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 and AMS (α -Methylstyrene). 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 or AMS in concentrations up to 15 mg/kg. Samples containing more than 15 mg/kg of polymer must be suitably diluted before measurement.

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 weight %. Samples having a polymer content of 1.0 weight % or greater should be suitably diluted prior to measurement.

1.4 The following applies to all specified limits in this standard: for purposes of determining conformance with this standard, an observed value or a calculated value 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 E 29.

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 and health practices and determine the applicability of regulatory limitations prior to use.* For specific hazard statements, see Section 8.

2. Referenced Documents

2.1 ASTM Standards:

D 2827 Specification for Styrene Monomer²

D 3437 Practice for Sampling and Handling Liquid Cyclic Products²

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

Current edition approved Feb. 22, 2002. Published August 2000. Originally published as D 2121 – 62. Last previous edition D 2121 – 95.

² Annual Book of ASTM Standards, Vol 06.04.

E 29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications³

2.2 Other Document:

OSHA Regulations, 29 CFR, paragraphs 1910.1000 and 1910.1200⁴

TEST METHOD A—DETERMINATION OF POLYMER IN STYRENE MONOMER OR α -METHYLSTYRENE PHOTOMETER METHOD

3. Summary of Test Method

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

4. Significance and Use

4.1 This test method can be used for determining polymer concentrations in styrene monomer or AMS.

4.2 This test method will not detect dimers and trimers.

4.3 This test method can be used for plant control and for specification analysis.

5. Interferences

5.1 Small changes in turbidity may occur with time. It is, therefore, important that the absorbance of calibration mixtures and samples be determined after standing the same length of time.

5.2 Hexane is used for two reasons:

5.2.1 To block out any color in the styrene or AMS, and

5.2.2 To indicate dissolved water in the styrene or AMS.

6. Apparatus

6.1 *Pipets*, 10 and 15-mL.

6.2 *Bottles or Flasks*, of suitable size equipped with glass stoppers.

³ Annual Book of ASTM Standards, Vol 14.02.

⁴ Available from Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.