



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

This standard is issued under the fixed designation D7977; 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 the polymer content of AMS (α -Methylstyrene). Dimers and trimers are not measured by these test methods.

1.2 This test method has been found applicable to determining the polymer content of 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 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 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:*²

D3437 Practice for Sampling and Handling Liquid Cyclic Products

D6367 Specification for AMS (α -Methylstyrene)

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

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

Current edition approved Dec. 1, 2014. Published March 2015. DOI: 10.1520/D7977-14.

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.

2.2 *Other Document:*³

OSHA Regulations, 29 CFR paragraphs 1910.1000 and 1910.1200

TEST METHOD A—DETERMINATION OF POLYMER IN α -METHYLSTYRENE VIA SPECTROPHOTOMETER

3. Summary of Test Method

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

4. Significance and Use

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

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 AMS, and

5.2.2 To indicate high levels of dissolved water in the AMS.

5.3 Water content was found to have a slight impact on the measurement of polymer in AMS solution. When the water concentration is below 260 ppm, its effect on the measurement of polymer in AMS solution is negligible.

6. Apparatus

6.1 *Class A Volumetric Pipets*, 10 and 15-mL.

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>.