



Designation: D 4588 - 87

AMERICAN SOCIETY FOR TESTING AND MATERIALS

1916 Race St., Philadelphia, Pa. 19103

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## Standard Guide for Analysis of *p*-Xylene<sup>1</sup>

This standard is issued under the fixed designation D 4588; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

### 1. Scope

1.1 This guide is intended to aid in the selection of suitable ASTM test methods for determining the chemical or physical characteristics of finished *p*-xylene.

1.2 The methods compiled in this guide are generally applicable for the analysis of *p*-xylene of 98 % or greater purity.

1.3 *This standard may involve hazardous materials, operations, and equipment. This standard does not purport to address all of the safety problems 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 a specific hazard statement, see Section 4.*

### 2. Referenced Documents

#### 2.1 ASTM Standards:

- D 86 Method for Distillation of Petroleum Products<sup>2</sup>
- D 847 Test Method for Acidity of Benzene, Toluene, Xylenes, Solvent Naphthas, and Similar Industrial Aromatic Hydrocarbons<sup>2</sup>
- D 848 Test Method for Acid Wash Color of Industrial Aromatic Hydrocarbons<sup>2</sup>
- D 850 Method for Distillation of Industrial Aromatic Hydrocarbons and Related Materials<sup>2</sup>
- D 1015 Test Method for Freezing Point of High-Purity Hydrocarbons<sup>2</sup>
- D 1016 Test Method for Purity of Hydrocarbons from Freezing Points<sup>2</sup>
- D 1209 Test Method for Color of Clear Liquids (Platinum-Cobalt Scale)<sup>2</sup>
- D 1353 Test Method for Nonvolatile Matter in Volatile Solvents for Use in Paint, Varnish, Lacquer, and Related Products<sup>2</sup>
- D 1492 Test Method for Bromine Index of Aromatic Hydrocarbons by Coulometric Titration<sup>2</sup>
- D 2360 Test Method for Trace Impurities in Monocyclic Aromatic Hydrocarbons by Gas Chromatography<sup>2</sup>
- D 3437 Practice for Sampling and Handling Liquid Cyclic Products<sup>2</sup>

D 3505 Test Method for Density or Relative Density of Pure Liquid Chemicals<sup>2</sup>

D 3798 Method for Analysis of *p*-Xylene by Gas Chromatography<sup>2</sup>

D 3961 Test Method for Trace Quantities of Sulfur in Liquid Aromatic Hydrocarbons by Oxidative Microcoulometry<sup>2</sup>

D 4045 Test Method for Sulfur in Petroleum Products by Hydrogenolysis and Rateometric Colorimetry<sup>3</sup>

D 4052 Test Method for Density and Relative Density of Liquids by Digital Density Meter<sup>3</sup>

#### 2.2 Other Documents:

A237.10-1971 Acceptable Concentration of Xylene (Dimethylbenzene)<sup>4</sup>

OSHA Regulations, 29 CFR, paragraphs 1910.1000 and 1910.1200<sup>5</sup>

### 3. Significance and Use

3.1 This guide establishes a summary of test procedures to help standardize the analysis of *p*-xylene. It is intended as an aid for setting specifications between producers and users of *p*-xylene and for use by laboratories supporting manufacturing processes using *p*-xylene.

3.2 The recommended test methods were selected, in part, on the basis of precision, bias, and ease of analysis. When applicable, an alternative method is suggested. These alternative methods should be used in the event that either equipment or reagents are not available to conduct the recommended test method.

### 4. Hazards

4.1 Consult current OSHA regulations and supplier's Material Safety Data Sheets on handling materials listed in this guide.

### 5. Test Methods

5.1 The material shall be sampled, and the properties enumerated in this guide can be determined in accordance with Table 1.

### 6. Precision and Bias

6.1 Most ASTM standard methods have precision limits. Reference to the individual standards for precision statements is recommended.

<sup>1</sup> This guide is under the jurisdiction of ASTM Committee D-16 on Aromatic Hydrocarbons and Related Chemicals and is the direct responsibility of Subcommittee D16.0A on Benzene, Toluene, Xylenes, Cyclohexane, and Their Derivatives.

Current edition approved May 29, 1987. Published August 1987.

<sup>2</sup> Annual Book of ASTM Standards, Vol 06.03.

<sup>3</sup> Annual Book of ASTM Standards, Vol 05.03.

<sup>4</sup> Available from American National Standards Institute, 1430 Broadway, New York, NY 10018

<sup>5</sup> Available from Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.