



Designation: D8305 – 19

Standard Test Method for The Determination of Total Aromatic Hydrocarbons and Total Polynuclear Aromatic Hydrocarbons in Aviation Turbine Fuels and other Kerosene Range Fuels by Supercritical Fluid Chromatography¹

This standard is issued under the fixed designation D8305; 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 concentration of total aromatics, and total polynuclear aromatic hydrocarbons in aviation turbine fuels and other kerosenes by supercritical fluid chromatography within the working range as listed below:

Prop. (mass %)	Method Working Range ^A	Valid Test Result Range ^B
PolyArom	0.3017 to 3.443	0.144 to 3.893
Tot Arom	0.2863 to 24.6256	0.004 to 25.375

^A Method working range:

high expected concentration limit, estimated using highest ILS sample mean
low expected concentration limit, estimated using lowest ILS sample mean

^B Valid test result range: due to testing variation, results within this range inclusively are considered valid for reporting and for applying the precision (R and r) functions as per Practice D6300.

1.2 This test method may also be used for the analyses of jet fuels, such as Synthetic Paraffinic Kerosenes (SPK) that contain not less than 0.29 % total aromatics by Test Method D2425.

1.3 This test method includes correlations to test methods Test Method D1319 for total aromatics and to Test Method D1840 for total naphthalenes content.

1.4 The values stated in SI units are to be regarded as standard. The values stated in inch-pound units are for information only.

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

D1319 Test Method for Hydrocarbon Types in Liquid Petroleum Products by Fluorescent Indicator Adsorption

D1655 Specification for Aviation Turbine Fuels

D1840 Test Method for Naphthalene Hydrocarbons in Aviation Turbine Fuels by Ultraviolet Spectrophotometry

D2425 Test Method for Hydrocarbon Types in Middle Distillates by Mass Spectrometry

D6299 Practice for Applying Statistical Quality Assurance and Control Charting Techniques to Evaluate Analytical Measurement System Performance

D6300 Practice for Determination of Precision and Bias Data for Use in Test Methods for Petroleum Products and Lubricants

D6379 Test Method for Determination of Aromatic Hydrocarbon Types in Aviation Fuels and Petroleum Distillates—High Performance Liquid Chromatography Method with Refractive Index Detection

D6708 Practice for Statistical Assessment and Improvement of Expected Agreement Between Two Test Methods that Purport to Measure the Same Property of a Material

D6792 Practice for Quality Management Systems in Petroleum Products, Liquid Fuels, and Lubricants Testing Laboratories

D7372 Guide for Analysis and Interpretation of Proficiency Test Program Results

D7566 Specification for Aviation Turbine Fuel Containing Synthesized Hydrocarbons

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

¹ This test method is under the jurisdiction of ASTM Committee D02 on Petroleum Products, Liquid Fuels, and Lubricants and is the direct responsibility of Subcommittee D02.04.0C on Liquid Chromatography.

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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.