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.

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Standard Guide for Evaluation of New Aviation Gasolines and New Aviation Gasoline Additives[1]

This standard is issued under the fixed designation D7826; 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 guide provides procedures to develop data for use in research reports for new aviation gasolines or new aviation gasoline additives.

1.2 This data is intended to be used by the ASTM subcommittee to make a determination of the suitability of the fuel for use as an aviation fuel in either a fleet-wide or limited capacity, and to make a determination that the proposed properties and criteria in the associated standard specification provide the necessary controls to ensure this fuel maintains this suitability during high-volume production.

1.3 These research reports are intended to support the development and issuance of new specifications or specification revisions for these products. Guidance to develop ASTM International standard specifications for aviation gasoline is provided in Subcommittee J on Aviation Fuels Operating Procedures, Annex A6, "Guidelines for the Development and Acceptance of a New Aviation Fuel Specification for Spark-Ignition Reciprocating Engines."

1.4 The procedures, tests, selection of materials, engines, and aircraft detailed in this guide are based on industry expertise to give appropriate data for review. Because of the diversity of aviation hardware and potential variation in fuel/additive formulations, not every aspect may be encompassed and further work may be required. Therefore, additional data beyond that described in this guide may be requested by the ASTM task force, Subcommittee J, or Committee D02 upon review of the specific composition, performance, or other characteristics of the candidate fuel or additive.

1.5 While it is beyond the scope of this guide, investigation of the future health and environmental impacts of the new aviation gasoline or new aviation gasoline additive and the requirements of environmental agencies is recommended.

1.6 The values stated in SI units are to be regarded as standard.

1.6.1 *Exception*—Some industry standard methodologies utilize imperial units as their primary system (permeability; Table A2.2).

1.7 *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.*

1.8 *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]

D86 Test Method for Distillation of Petroleum Products and Liquid Fuels at Atmospheric Pressure
D97 Test Method for Pour Point of Petroleum Products
D130 Test Method for Corrosiveness to Copper from Petroleum Products by Copper Strip Test
D156 Test Method for Saybolt Color of Petroleum Products (Saybolt Chromometer Method)
D323 Test Method for Vapor Pressure of Petroleum Products (Reid Method)
D381 Test Method for Gum Content in Fuels by Jet Evaporation
D395 Test Methods for Rubber Property—Compression Set
D412 Test Methods for Vulcanized Rubber and Thermoplastic Elastomers—Tension
D445 Test Method for Kinematic Viscosity of Transparent and Opaque Liquids (and Calculation of Dynamic Viscosity)
D471 Test Method for Rubber Property—Effect of Liquids
D664 Test Method for Acid Number of Petroleum Products by Potentiometric Titration

[1] This guide is under the jurisdiction of ASTM Committee D02 on Petroleum Products, Liquid Fuels, and Lubricants and is the direct responsibility of Subcommittee D02.J0.02 on Aviation Piston Engine Fuels.

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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.

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

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