



Designation: D8076 – 24

Standard Specification for 95, 98, and 100 Research Octane Number Test Fuels for Automotive Spark-Ignition Engines¹

This standard is issued under the fixed designation D8076; 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 specification covers the requirements of 95, 98, and 100 research octane number (RON) test fuels suitable for spark-ignition engines to be utilized in ground vehicles.

1.1.1 The fuels described by this specification are intended for developing technologies that lead to reduced vehicle energy consumption, such as higher compression ratio, higher power density, increased turbocharger boost pressure, smaller swept displacement volume, and operation at lower engine speeds.

1.1.2 The fuels described in this test fuel specification may not meet all of the performance or regulatory requirements for use in vehicles using commercial gasoline.

1.2 The fuels covered in this specification may contain oxygenates, such as alcohols and ethers, up to 50 % by volume. This specification covers fuels that may contain both fossil and bio-derived components.

1.3 This specification provides a description of 95, 98, and 100 RON test fuels for automotive spark-ignition engines. Not all these fuels are currently in the marketplace, but they are being developed and require defined standard test fuels. These fuels could become available in the marketplace if/when such engines are introduced in commerce. The specification is under continuous review, which can result in revisions based on changes in fuel, automotive requirements, or test methods, or a combination thereof. All users of this specification, therefore, should refer to the latest edition.

NOTE 1—If there is any doubt as to the latest edition of Specification D8076, contact ASTM International Headquarters.

1.4 The values stated in SI units are the standard.

1.4.1 *Exception*—Non-SI values are provided for information only. U.S. federal regulations frequently specify non-SI units.

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

- D86 Test Method for Distillation of Petroleum Products and Liquid Fuels at Atmospheric Pressure
- D130 Test Method for Corrosiveness to Copper from Petroleum Products by Copper Strip Test
- D381 Test Method for Gum Content in Fuels by Jet Evaporation
- D525 Test Method for Oxidation Stability of Gasoline (Induction Period Method)
- D1152 Specification for Methanol (Methyl Alcohol)
- D1266 Test Method for Sulfur in Petroleum Products (Lamp Method)
- D2622 Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-ray Fluorescence Spectrometry
- D2699 Test Method for Research Octane Number of Spark-Ignition Engine Fuel
- D2700 Test Method for Motor Octane Number of Spark-Ignition Engine Fuel
- D3120 Test Method for Trace Quantities of Sulfur in Light Liquid Petroleum Hydrocarbons by Oxidative Microcoulometry
- D3237 Test Method for Lead in Gasoline by Atomic Absorption Spectroscopy
- D3831 Test Method for Manganese in Gasoline By Atomic Absorption Spectroscopy
- D4057 Practice for Manual Sampling of Petroleum and Petroleum Products

¹ This specification is under the jurisdiction of ASTM Committee D02 on Petroleum Products, Liquid Fuels, and Lubricants and is the direct responsibility of Subcommittee D02.A0.01 on Gasoline and Gasoline-Oxygenate Blends.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at www.astm.org/contact. 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