



Designation: D6426 – 18

Standard Test Method for Determining Filterability of Middle Distillate Fuel Oils¹

This standard is issued under the fixed designation D6426; 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 a procedure for determining the filterability of distillate fuel oils within the viscosity range from 1.70 mm²/s to 6.20 mm²/s (cSt) at 40 °C.

NOTE 1—ASTM specification fuels falling within the scope of this test method are Specification D396 Grade No. 2, Specification D975 Grade No. 2-D, and Specification D2880 Grade No. 2-GT.

NOTE 2—The test method has been used with lower viscosity middle distillate fuels such as Specification D396 Grade No. 1, Specification D975 Grade No. 1-D, and Specification D2880 Grade No. 1-GT, but the precision has not been studied and therefore the stated precision has not been validated for these grades.

1.2 This test method is not applicable to fuels that contain undissolved water.

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

1.3.1 Non-SI units, specifically U.S. customary units such as temperature in degrees Fahrenheit and pressure in pounds per square inch gauge (psig), are included for information.

1.4 *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.*

1.5 *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

D396 Specification for Fuel Oils

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 D02.14 on Stability, Cleanliness and Compatibility of Liquid 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.

D975 Specification for Diesel Fuel Oils

D2880 Specification for Gas Turbine Fuel Oils

D4057 Practice for Manual Sampling of Petroleum and Petroleum Products

D4176 Test Method for Free Water and Particulate Contamination in Distillate Fuels (Visual Inspection Procedures)

D4177 Practice for Automatic Sampling of Petroleum and Petroleum Products

D4860 Test Method for Free Water and Particulate Contamination in Middle Distillate Fuels (Clear and Bright Numerical Rating)

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

3.1.1 *filterability*, *n*—a measure of the rapidity with which a standard filter medium is plugged by insoluble matter in fuel and may be described as a function of pressure or volume:

3.1.2 *filterability (by pressure)*, *n*—the pressure drop across a filter medium when 300 mL of fuel is passed at a rate of 20 mL/min.

3.1.3 *filterability (by volume)*, *n*—the volume of fuel passed when a pressure of 104 kPa (15 psig) is reached.

3.1.3.1 *Discussion*—Filterability by volume is used when less than 300 mL passes at a pressure up to 104 kPa (15 psig).

3.1.4 *filterability quality factor (F-QF)*, *n*—a value that defines the filter plugging tendency of a fuel caused by particulates.

3.1.4.1 *Discussion*—The F-QF value is calculated using the volume and pressure attained at the end of the test cycle, according to one of two equations, depending on the outcome of the test. (See Section 10, Calculations.)

4. Summary of Test Method

4.1 A sample is passed at a constant rate (20 mL/min) through a standard porosity filter medium. The pressure drop across the filter and the volume of filtrate are monitored. The test is concluded either when the pressure drop across the filter exceeds 104 kPa (15 psig) or when 300 mL have passed through the filter.

4.2 Results are reported as either the volume that has passed through the filter when a pressure of 104 kPa (15 psig) has been reached or the pressure drop when 300 mL have passed through the filter.

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