



Designation: D4625 – 16^{ε1}

Standard Test Method for Middle Distillate Fuel Storage Stability at 43 °C (110 °F)¹

This standard is issued under the fixed designation D4625; 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.

This standard has been approved for use by agencies of the U.S. Department of Defense.

^{ε1} NOTE—The IP designation was removed and footnote 1 was revised editorially in February 2018.

1. Scope*

1.1 This test method covers a method for evaluating the inherent storage stability of distillate fuels having flash points above 38 °C (100 °F), by Test Methods D93, and 90 % distilled points below 340 °C (644 °F), by Test Method D86.

NOTE 1—ASTM specification fuels falling within the scope of this test method are Specification D396, Grade Nos. 1 and 2; Specification D975, Grades 1-D and 2-D; and Specification D2880, Grades 1-GT and 2-GT.

1.2 This test method is not suitable for quality control testing but, rather it is intended for research use to shorten storage time relative to that required at ambient storage temperatures.

1.3 Appendix X1 presents additional information about storage stability and the correlation of Test Method D4625 results with sediment formation in actual field storage.

1.4 The values given in SI units are to be regarded as the standard.

1.4.1 *Exception*—The values in parentheses 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.*

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.

Current edition approved Dec. 1, 2016. Published January 2017. Originally approved in 1986. Last previous edition approved in 2014 as D4625 – 14. DOI: 10.1520/D4625-16E01.

2. Referenced Documents

2.1 ASTM Standards:²

- D86 Test Method for Distillation of Petroleum Products and Liquid Fuels at Atmospheric Pressure
- D93 Test Methods for Flash Point by Pensky-Martens Closed Cup Tester
- D381 Test Method for Gum Content in Fuels by Jet Evaporation
- D396 Specification for Fuel Oils
- D975 Specification for Diesel Fuel Oils
- D1193 Specification for Reagent Water
- D2880 Specification for Gas Turbine Fuel Oils
- D4057 Practice for Manual Sampling of Petroleum and Petroleum Products
- D4177 Practice for Automatic Sampling of Petroleum and Petroleum Products

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

- 3.1.1 *adherent insolubles, n*—gums formed during storage that remain tightly attached to the walls of the vessel after fuel has been flushed from the container.
- 3.1.2 *filterable insolubles, n*—solids formed during storage that can be removed from the fuel by filtration.
- 3.1.3 *inherent storage stability, n*—of middle distillate fuel—the resistance of the fuel to change during storage in contact with air, but in the absence of other environmental factors such as water, or reactive metals and dirt.
- 3.1.4 *total insolubles, n*—the arithmetic sum of the filterable insolubles plus the adherent insolubles.

4. Summary of Test Method

4.1 Four-hundred (400) mL volumes of filtered fuel are aged by storage in borosilicate glass containers at 43 °C (110 °F) for periods of 4, 8, 12, 18, and 24 weeks. If desired, perform

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