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.

Designation: D7224 – 23

Standard Test Method for Determining Water Separation Characteristics of Kerosine-Type Aviation Turbine Fuels Containing Additives by Portable Separometer[1]

This standard is issued under the fixed designation D7224; 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.

INTRODUCTION

This test method was developed to satisfy three objectives: *(1)* Develop a test method that would respond in the same manner as Test Method D3948 to strong surfactants, but not give low micro-separometer (MSEP) ratings to fuels containing weak surfactants (additives) that do not degrade the performance of commercial filter separator elements; *(2)* Use filter media in the coalescer test that would be representative of the filtration media in commercial filter separator elements; and *(3)* Improve the precision of the test method compared to Test Method D3948.

This test method was developed using material that is representative of coalescing materials currently used in commercial filter separator elements. The fiberglass coalescing material used in Test Method D3948 was suitable for coalescing filters in use when that test method was developed, but developments in coalescing elements in the intervening years have resulted in improved materials that are not affected by weak surfactants. Test Method D3948 yields low results on some additized fuels that do not affect the performance of filter separators (coalescing filters) in actual service. Since this test method was developed with material that is representative of the media used in current filter separators, the results by this test method are more relevant to performance in current filter separators.

1. Scope*

1.1 This test method covers a rapid portable means for field and laboratory use to rate the ability of kerosine-type aviation turbine fuels, both neat and those containing additives, to release entrained or emulsified water when passed through coalescing material.

1.1.1 This test method is applicable to kerosine-type aviation turbine fuels including: Jet A and Jet A-1 (as described in Specification D1655); JP-5, JP-7, JP-8, and JP-8+100. (See Section 6.)

1.2 The values stated in SI units are to be regarded as standard. The values given in parentheses after SI units are provided for information only and are not considered standard.

1.3 *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.* For specific warning statements, see 8.2 – 8.5.

1.4 *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]

D1655 Specification for Aviation Turbine Fuels

D2550 Method of Test for Water Separation Characteristics of Aviation Turbine Fuels (Withdrawn 1989)[3]

D3602 Test Method for Water Separation Characteristics of Aviation Turbine Fuels (Withdrawn 1994)[3]

[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.J0.05 on Fuel Cleanliness.

Current edition approved Jan. 15, 2023. Published January 2023. Originally approved in 2005. Last previous edition approved in 2020 as D7224 – 20. DOI: 10.1520/D7224-23.

[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.

[3] The last approved version of this historical standard is referenced on www.astm.org.

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

Copyright © ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959. United States