



# Standard Test Method for Particulate Contamination in Aviation Fuels by Laboratory Filtration<sup>1</sup>

This standard is issued under the fixed designation D5452; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

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

## 1. Scope\*

1.1 This test method covers the gravimetric determination by filtration of particulate contaminant in a sample of aviation turbine fuel delivered to a laboratory.

1.1.1 The sample is filtered through a test membrane and a control membrane using vacuum. The mass change difference identifies the contaminant level per unit volume.

1.2 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

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 and health practices and determine the applicability of regulatory limitations prior to use.* For specific hazard statements, see 4.2, 7.3, 7.5, 11.2, and X1.7.2. Before using this standard, refer to supplier's safety labels, material safety data sheets, and technical literature.

## 2. Referenced Documents

### 2.1 ASTM Standards:<sup>2</sup>

D56 Test Method for Flash Point by Tag Closed Cup Tester  
D93 Test Methods for Flash Point by Pensky-Martens Closed Cup Tester  
D1193 Specification for Reagent Water  
D1535 Practice for Specifying Color by the Munsell System  
D2244 Practice for Calculation of Color Tolerances and

Color Differences from Instrumentally Measured Color Coordinates

D2276 Test Method for Particulate Contaminant in Aviation Fuel by Line Sampling

D3828 Test Methods for Flash Point by Small Scale Closed Cup Tester

D4306 Practice for Aviation Fuel Sample Containers for Tests Affected by Trace Contamination

D4865 Guide for Generation and Dissipation of Static Electricity in Petroleum Fuel Systems

D6615 Specification for Jet B Wide-Cut Aviation Turbine Fuel

## 3. Terminology

### 3.1 Definitions:

3.1.1 *bond, v*—to connect two parts of a system electrically by means of a bonding wire to eliminate voltage differences.

3.1.2 *ground, vt*—to connect electrically with ground (earth).

3.1.3 *membrane filter, n*—a porous article of closely controlled pore size through which a liquid is passed to separate matter in suspension.

3.1.3.1 *Discussion*—Research Report RR:D02-1012<sup>3</sup> contains information on membrane filters that meet the requirements therein.

3.1.4 *particulate, adj*—of or relating to minute separate particles.

3.1.4.1 *Discussion*—Solids generally composed of oxides, silicates, and fuel insoluble salts.

3.1.5 *volatile fuels*—relatively wide boiling range volatile distillate.

<sup>1</sup> This test method is under the jurisdiction of ASTM Committee D02 on Petroleum Products and Lubricants and is the direct responsibility of Subcommittee D02.J0.05 on Fuel Cleanliness.

Current edition approved June 1, 2012. Published October 2012. Originally approved in 1993. Last previous edition approved in 2008 as D5452-08. DOI: 10.1520/D5452-12.

This test method has been separated from D2276 and has been modified primarily to establish improved safety measures.

<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

<sup>3</sup> Supporting data (including a list of suppliers who have provided data indicating their membranes, field monitors, and field monitor castings) have been filed at ASTM International Headquarters and may be obtained by requesting Research Report RR:D02-1012.