



Standard Specification for Fuel System Icing Inhibitors¹

This standard is issued under the fixed designation D4171; 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 additives for aviation fuels (for example, Specifications **D910**, **D7547**, and **D1655**) used to inhibit ice formation in aircraft fuel systems.

1.2 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.3 **WARNING**—Mercury has been designated by many regulatory agencies as a hazardous material that can cause central nervous system, kidney and liver damage. Mercury, or its vapor, may be hazardous to health and corrosive to materials. Caution should be taken when handling mercury and mercury containing products. See the applicable product Material Safety Data Sheet (MSDS) for details and EPA's website—<http://www.epa.gov/mercury/faq.htm>—for additional information. Users should be aware that selling mercury and/or mercury containing products into your state or country may be prohibited by law.

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 and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:²

- D56** Test Method for Flash Point by Tag Closed Cup Tester
- D93** Test Methods for Flash Point by Pensky-Martens Closed Cup Tester
- D268** Guide for Sampling and Testing Volatile Solvents and Chemical Intermediates for Use in Paint and Related Coatings and Material
- D891** Test Methods for Specific Gravity, Apparent, of Liquid

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.J0.04 on Additives and Electrical Properties.

Current edition approved Dec. 1, 2016. Published January 2017. Originally approved in 1982. Last previous edition approved in 2016 as D4171 – 16. DOI: 10.1520/D4171-16A.

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.

Industrial Chemicals

- D910** Specification for Leaded Aviation Gasolines
- D1078** Test Method for Distillation Range of Volatile Organic Liquids
- D1209** Test Method for Color of Clear Liquids (Platinum-Cobalt Scale)
- D1296** Test Method for Odor of Volatile Solvents and Diluents
- D1353** Test Method for Nonvolatile Matter in Volatile Solvents for Use in Paint, Varnish, Lacquer, and Related Products
- D1364** Test Method for Water in Volatile Solvents (Karl Fischer Reagent Titration Method)
- D1476** Test Method for Heptane Miscibility of Lacquer Solvents
- D1613** Test Method for Acidity in Volatile Solvents and Chemical Intermediates Used in Paint, Varnish, Lacquer, and Related Products
- D1655** Specification for Aviation Turbine Fuels
- D1722** Test Method for Water Miscibility of Water-Soluble Solvents
- D3828** Test Methods for Flash Point by Small Scale Closed Cup Tester
- D4052** Test Method for Density, Relative Density, and API Gravity of Liquids by Digital Density Meter
- D5006** Test Method for Measurement of Fuel System Icing Inhibitors (Ether Type) in Aviation Fuels
- D7547** Specification for Hydrocarbon Unleaded Aviation Gasoline
- E1** Specification for ASTM Liquid-in-Glass Thermometers
- E70** Test Method for pH of Aqueous Solutions With the Glass Electrode
- E203** Test Method for Water Using Volumetric Karl Fischer Titration
- E300** Practice for Sampling Industrial Chemicals
- E450** Test Method for Measurement of Color of Low-Colored Clear Liquids Using the Hunterlab Color Difference Meter (Withdrawn 1993)³
- E1064** Test Method for Water in Organic Liquids by Coulometric Karl Fischer Titration

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