



Standard Test Method for Flash Point and Fire Point of Liquids by Tag Open-Cup Apparatus¹

This standard is issued under the fixed designation D1310; 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.

1. Scope*

1.1 This test method covers the determination by Tag Open-Cup Apparatus of the flash point and fire point of liquids having flash points between -18 and 165°C (0 and 325°F) and fire points up to 325°F .

1.2 This test method, when applied to paints and resin solutions that tend to skin over or that are very viscous, gives less reproducible results than when applied to solvents.

NOTE 1—In order to conserve time and sample, the fire point of a material may be determined by the Tag Open-Cup Method by continuing the heating of the specimen to its fire point. Fire points may also be determined by Test Method D92, which should be used for fire points beyond the scope of this test method.

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

1.4 *This standard should be used to measure and describe the properties of materials, products, or assemblies in response to heat and flame under controlled laboratory conditions and should not be used to describe or appraise the fire hazard or fire risk of materials, products, or assemblies under actual fire conditions. However, results of this test may be used as elements of a fire risk assessment which takes into account all of the factors pertinent to an assessment of the fire hazard of a particular end use*

1.5 **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 Safety Data Sheet (SDS) 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.

1.6 *This standard does not purport to address the safety problems 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

- D92 Test Method for Flash and Fire Points by Cleveland Open Cup Tester
- D850 Test Method for Distillation of Industrial Aromatic Hydrocarbons and Related Materials
- D1015 Test Method for Freezing Points of High-Purity Hydrocarbons
- D1016 Test Method for Purity of Hydrocarbons from Freezing Points
- D1078 Test Method for Distillation Range of Volatile Organic Liquids
- D1364 Test Method for Water in Volatile Solvents (Karl Fischer Reagent Titration Method)
- D2268 Test Method for Analysis of High-Purity *n*-Heptane and Isooctane by Capillary Gas Chromatography
- D2699 Test Method for Research Octane Number of Spark-Ignition Engine Fuel
- D2700 Test Method for Motor Octane Number of Spark-Ignition Engine Fuel
- E1 Specification for ASTM Liquid-in-Glass Thermometers
- E1137 Specification for Industrial Platinum Resistance Thermometers
- E2251 Specification for Liquid-in-Glass ASTM Thermometers with Low-Hazard Precision Liquids
- E2877 Guide for Digital Contact Thermometers

3. Terminology

3.1 Definitions:

¹ This test method is under the jurisdiction of ASTM Committee D01 on Paint and Related Coatings, Materials, and Applications and is the direct responsibility of Subcommittee D01.21 on Chemical Analysis of Paints and Paint Materials.

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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.

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