



Standard Test Method for Selection and Use of ASTM Standards for the Determination of Flash Point of Chemicals by Closed Cup Methods¹

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1. Scope

1.1 This test method covers the determination of the flash point of liquid and solid chemical compounds flashing from below – 10 to 370°C (16 to 700°F). The procedures and apparatus in Test Methods **D56**, **D93**, **D3278**, **D3828**, and **D3941** are to be used. Modification to these procedures are specified for tests on solids and viscous liquids. The significance of the results obtained is discussed along with possible sources of error and factors that might cause interference.

1.2 Suggestions for adapting this procedure to mixtures of chemicals are included (see **Appendix X2**).

1.3 This test method 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 or assemblies under actual fire conditions. However, results of this test method may be used as elements of a fire risk assessment that take into account all of the factors that are pertinent to an assessment of the fire hazard of a particular end use.

1.4 **Warning**—Mercury has been designated by EPA and many state 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 may be prohibited by state law.

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 appro-*

priate safety and health practices and determine the applicability of regulatory limitations prior to use. See also Section 8.

2. Referenced Documents

2.1 ASTM Standards:²

- D56** Test Method for Flash Point by Tag Closed Cup Tester
- D92** Test Method for Flash and Fire Points by Cleveland Open Cup Tester
- D93** Test Methods for Flash Point by Pensky-Martens Closed Cup Tester
- D270** Methods of Sampling Petroleum and Petroleum Products (Withdrawn 1984)³
- D1310** Test Method for Flash Point and Fire Point of Liquids by Tag Open-Cup Apparatus
- D3278** Test Methods for Flash Point of Liquids by Small Scale Closed-Cup Apparatus
- D3827** Test Method for Estimation of Solubility of Gases in Petroleum and Other Organic Liquids
- D3828** Test Methods for Flash Point by Small Scale Closed Cup Tester
- D3934** Test Method for Flash/No Flash Test—Equilibrium Method by a Closed-Cup Apparatus
- D3941** Test Method for Flash Point by the Equilibrium Method With a Closed-Cup Apparatus
- E681** Test Method for Concentration Limits of Flammability of Chemicals (Vapors and Gases)
- E1232** Test Method for Temperature Limit of Flammability of Chemicals

3. Terminology

3.1 Definitions:

3.1.1 *flash point*—the lowest temperature, corrected to a pressure of 760 mm Hg (101.3 kPa) (1013 mbar) at which application of an ignition source causes the vapors of a specimen to ignite under specified conditions of test.

¹ This test method is under jurisdiction of ASTM Committee **E27** on Hazard Potential of Chemicals and is the direct responsibility of Subcommittee **E27.04** on Flammability and Ignitability of Chemicals.

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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.

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