



Designation: D3934 – 90 (Reapproved 2007)

# Standard Test Method for Flash/No Flash Test—Equilibrium Method by a Closed-Cup Apparatus<sup>1</sup>

This standard is issued under the fixed designation D3934; 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.

## INTRODUCTION

ASTM Flash Point Test Methods [D56](#), [D93](#), [D3278](#), and [D3941](#) are specified by government departments and agencies for determining whether liquids are flammable or combustible. These classifications are used as the basis for regulating the handling and shipping of liquids.

ISO/TC 35, Paints and Varnishes, and ISO/TC 28, Petroleum and Related Products, have issued ISO 1516 as a common standard, applicable to paints, varnishes, petroleum, and related products. This method is similar to ISO 1516 but uses standard ASTM cups and style and format. Test Methods [D3278](#) and [D3828](#) operate on the equilibrium principle by using the Setaflash tester that has a temperature-control device.

This test method does not determine the finite flash point but whether or not flashing occurs at a single specified temperature. The latter determination is made more accurate by ensuring that the test is carried out only when the material under test and the air/vapor mixture above it are in approximate equilibrium at the specified temperature.

## 1. Scope

1.1 This test method covers the determination of whether a liquid complies with the closed-cup flash point requirements in government regulations, or in specifications, or as agreed between the purchaser and the seller.

1.2 This test method is limited to a temperature range between 0 and 110°C (32 and 230°F).

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*

<sup>1</sup> 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 ASTM Subcommittee D01.21 on Chemical Analysis of Paints and Paint Materials.

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*of the factors which are pertinent to an assessment of the fire hazard of a particular end use.*

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

## 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](#)

[D3278 Test Methods for Flash Point of Liquids by Small Scale Closed-Cup Apparatus](#)

[D3828 Test Methods for Flash Point by Small Scale Closed Cup Tester](#)

[D3941 Test Method for Flash Point by the Equilibrium Method With a Closed-Cup Apparatus](#)

[E1 Specification for ASTM Liquid-in-Glass Thermometers](#)

<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.