



Designation: D 3934 – 90 (Reapproved 2001)

Standard Test Method for Flash/No Flash Test—Equilibrium Method by a Closed-Cup Apparatus¹

This standard is issued under the fixed designation D 3934; 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.

INTRODUCTION

ASTM Flash Point Test Methods D 56, D 93, D 3278, and D 3941 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 D 3278 and D 3828 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 32 and 230°F (0 and 110°C).

1.3 The values stated in inch-pound 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 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 appro-*

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

2. Referenced Documents

2.1 *ASTM Standards:*

D 56 Test Method for Flash Point by Tag Closed Tester²

D 93 Test Methods for Flash Point by Pensky-Martens

Closed Tester²

D 3278 Test Methods for Flash Point of Liquids by Small Scale Closed-Cup Apparatus³

D 3828 Test Methods for Flash Point by Small Scale Closed Tester⁴

D 3941 Test Method for Flash Point by the Equilibrium Method with a Closed-Cup Apparatus³

E 1 Specification for ASTM Thermometers⁵

2.2 *ISO Standard:*

ISO 1516 Paints, varnishes, petroleum, and related products—Flash/no-flash test—Closed cup equilibrium method⁶

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 ASTM Subcommittee D01.22 on Health and Safety.

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² *Annual Book of ASTM Standards*, Vol 05.01.

³ *Annual Book of ASTM Standards*, Vol 06.01.

⁴ *Annual Book of ASTM Standards*, Vol 05.02.

⁵ *Annual Book of ASTM Standards*, Vol 14.03.

⁶ Available from American National Standards Institute, 13th Floor, 11 W. 42nd St., New York, NY 10036.