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An American National Standard



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Standard Test Methods for Flash Point by Small Scale Closed Cup Tester¹

This standard is issued under the fixed designation D 3828; 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 Department of Defense.

INTRODUCTION

The flash point method is generally used for testing a sample at a specific temperature. At a set temperature, the specimen being tested and the air-vapor mixture above it are close to thermal equilibrium. Test methods for other flash point equipment operated at a specific temperature are described in Test Method D 3941.

Flash point values are a function of the apparatus design, the condition of the apparatus used, and the operational procedure carried out. Flash point can therefore only be defined in terms of a standard test method, and no general valid correlation can be guaranteed between results obtained by different test methods, or with test apparatus different from that specified.

1. Scope *

1.1 These test methods cover procedures for the determination of the flash point by a small scale closed tester. The procedures may be used to determine the actual flash point temperature of a sample or whether a product will or will not flash at a specified temperature (flash/no flash).

1.2 *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.*

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

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 applica-*

bility of regulatory limitations prior to use. For specific hazard statements, see 11.9.1, Table 1, Footnote B, A2.1, A2.2 and the Material Safety Data Sheets for the product being tested.

2. Referenced Documents

2.1 ASTM Standards:

D 3941 Test Method for Flash Point by the Equilibrium Method with a Closed-Cup Apparatus²

2.2 ISO Standards:³

Guide 34 Quality Systems Guidelines for the Production of Reference Materials

Guide 35 Certification of Reference Materials—General and Statistical Principles

3. Terminology

3.1 Definitions:

3.1.1 *equilibrium*—the vapor above the liquid (specimen) and the liquid in a flash point apparatus specimen cup are at the same temperature at the time the ignition source is applied.

3.1.1.1 *Discussion*—This condition may not be fully achieved in practice. Although the temperature pattern is in equilibrium, the temperature is not uniform throughout the specimen cup because of the contrast between the hot liquid test specimen and the cooler lid and shutter.

3.1.2 *flash point*—the lowest temperature corrected to a pressure of 760 mm Hg (101.3 kPa) at which application of a

¹ These test methods are under the jurisdiction of ASTM Committee D02 on Petroleum Products and Lubricants and is the direct responsibility of Subcommittee D02.08 on Volatility.

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This is also a standard of the Institute of Petroleum issued under the fixed designation IP 303. The final number indicates year of last revision. These test methods were adopted as a joint ASTM-IP standard in 1979.

² *Annual Book of ASTM Standards*, Vol 06.01.

³ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036.

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

