



Standard Test Method for Pour Point of Petroleum Products (Rotational Method)¹

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INTRODUCTION

This test method covers an alternative procedure for the determination of pour point of petroleum products using an automatic apparatus.

1. Scope

1.1 This test method covers the determination of pour point of petroleum products by an automatic instrument that continuously rotates the test specimen against a suspended detection device during cooling of the test specimen.

1.2 This test method is designed to cover the range of temperatures from -57 to $+51^{\circ}\text{C}$; however, the range of temperatures included in the 1992 interlaboratory program only covered the temperature range of -39 to $+6^{\circ}\text{C}$ (see 13.4).

1.3 This test method determines the no-flow point of petroleum products by detection of the crystal structure or viscosity increase, or both, in the sample that is sufficient to impede flow of the specimen.

1.4 This test method is not intended for use with crude oils.

NOTE 1—The applicability of this test method on residual fuel samples has not been verified. For further information on applicability, refer to 13.4.

1.5 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.6 *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:²

D97 Test Method for Pour Point of Petroleum Products

D4057 Practice for Manual Sampling of Petroleum and Petroleum Products

D4177 Practice for Automatic Sampling of Petroleum and Petroleum Products

2.2 Energy Institute Standards:³

IP 15 Test Method for Pour Point of Petroleum Products

3. Terminology

3.1 Definitions:

3.1.1 *pour point, n—in petroleum products*, the lowest temperature at which movement of the test specimen is observed under prescribed conditions of test.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *no-flow point, n—in petroleum products*, the temperature of the test specimen at which a wax crystal structure or viscosity increase, or both, impedes movement of the surface of the test specimen under the conditions of the test.

3.2.2 *Discussion*—The no-flow point occurs when, upon cooling, the formation of wax crystal structures or viscosity increase, or both, have progressed to the point where the applied observation device no longer detects movement under the conditions of the test. The preceding observation temperature, at which flow of the test specimen is last observed, is the pour point.

3.2.3 *pour point at 3°C testing intervals, n—in petroleum products*, the temperature calculated by rounding the no-flow point of the test specimen to the next higher integer which is a multiple of 3°C .

3.2.4 *Discussion*—The no-flow point can be measured with a resolution of 0.1°C in this test method. In Test Method D97 observations for no-flow are in 3°C intervals and when results with a similar format to Test Method D97 are required, this calculation shall be performed. Some apparatus can perform this calculation automatically.

3.2.5 *rotational, n—in this standard*, the technique of turning the test specimen jar in an upright position upon a turntable

¹ This test method is under the jurisdiction of ASTM Committee D02 on Petroleum Products and Lubricants and is the direct responsibility of Subcommittee D02.07 on Flow Properties.

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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 Available from Energy Institute, 61 New Cavendish St., London, WIG 7AR, U.K., <http://www.energyinst.org.uk>.