



Designation: D187 – 24

Standard Test Method for Burning Quality of Kerosene¹

This standard is issued under the fixed designation D187; 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 U.S. Department of Defense.

1. Scope*

1.1 This test method covers the qualitative determination of the burning properties of kerosene to be used for illuminating purposes. (**Warning**—Combustible. Vapor harmful.)

NOTE 1—The corresponding Energy Institute (IP) test method is IP 10 which features a quantitative evaluation of the wick-char-forming tendencies of the kerosene, whereas Test Method D187 features a qualitative performance evaluation of the kerosene. Both test methods subject the kerosene to somewhat more severe operating conditions than would be experienced in typical designated applications.

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

1.3 *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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.* Specific warning statements appear throughout the test method.

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*²

D91 Test Method for Precipitation Number of Lubricating Oils

D3699 Specification for Kerosine

D4057 Practice for Manual Sampling of Petroleum and Petroleum Products

¹ This test method is under the jurisdiction of ASTM Committee D02 on Petroleum Products, Liquid Fuels, and Lubricants and is the direct responsibility of Subcommittee D02.E0 on Burner, Diesel and Non-Aviation Gas Turbine Fuels.

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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.

D4175 Terminology Relating to Petroleum Products, Liquid Fuels, and Lubricants

D4177 Practice for Automatic Sampling of Petroleum and Petroleum Products

2.2 *Energy Institute Standard:*³

IP 10 Determination of kerosine burning characteristics—24 hour method

2.3 *Other Document:*⁴

Formulas for Denatured Alcohol and Rum Treasury Dept., U. S. Bureau of Alcohol, Tobacco, and Firearms, Publication No. 368

3. Terminology

3.1 See Terminology D4175 for terms used in this test method.

4. Summary of Test Method

4.1 The kerosene sample is burned for 16 h in a specified lamp under specified conditions. The average rate of burning, the change in the shape of the flame, and the density and color of the chimney deposit are reported.

5. Significance and Use

5.1 Since the information provided by this test method is largely qualitative in nature, specific limits covering the following characteristics are required in referring to this test method in specifications for kerosene:

5.1.1 Duration of the test: 16 h is understood, if not otherwise specified;

5.1.2 Permissible change in flame shape and dimensions during the test;

5.1.3 Description of the acceptable appearance of the chimney deposit.

³ Available from Energy Institute, 61 New Cavendish St., London, W1G 7AR, U.K., <http://www.energyinst.org>.

⁴ Available from U.S. Government Printing Office, Superintendent of Documents, 732 N. Capitol St., NW, Mail Stop IDCC, Washington, DC 20401, <http://www.gpo.gov/fdsys>.

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