



Designation: D2880 – 18a

Standard Specification for Gas Turbine Fuel Oils¹

This standard is issued under the fixed designation D2880; 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 specification covers the selection of fuels for gas turbines, excepting gas turbines used in aircraft, for the guidance of interested parties such as turbine manufacturers and the suppliers and purchasers of fuel oils. The specification sets forth the properties of fuels at the time and place of custody transfer to the user.

1.2 Three appendixes are provided for informational purposes only and do not constitute a requirement of this specification unless mutually agreed upon between the interested parties.

1.2.1 **Appendix X1** describes the five grades of gas turbine fuels covered by this specification. Further, it states the significance of various test methods used in inspecting the fuels.

1.2.2 **Appendix X2** discusses the sources of fuel contaminants and notes the significance of such contaminants in the operation of gas turbines and gas turbine fuel systems. The particular significance of trace metals in gas turbine fuels is noted. Upper limits of trace metals are recommended for the various grades of gas turbine fuels, but these recommended limits do not constitute a requirement of the specification unless mutually agreed upon by the interested parties. Limitations due to the use of used or recycled oil are also noted.

NOTE 1—The gas turbine operator should consult Practice **D4418** for methods of ensuring fuels of adequate cleanliness and for guidance on long-term storage of distillate fuels and on liquids from non-petroleum sources as gas turbine.

NOTE 2—Nothing in this specification shall preclude observance of federal, state, or local regulations which may be more restrictive.

NOTE 3—The generation and dissipation of static electricity can create problems in the handling of distillate gas turbine fuel oils. For more information on the subject, see Guide **D4865**.

1.3 *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

- D56** Test Method for Flash Point by Tag Closed Cup Tester
- D86** Test Method for Distillation of Petroleum Products and Liquid Fuels at Atmospheric Pressure
- D93** Test Methods for Flash Point by Pensky-Martens Closed Cup Tester
- D97** Test Method for Pour Point of Petroleum Products
- D129** Test Method for Sulfur in Petroleum Products (General High Pressure Decomposition Device Method)
- D396** Specification for Fuel Oils
- D445** Test Method for Kinematic Viscosity of Transparent and Opaque Liquids (and Calculation of Dynamic Viscosity)
- D482** Test Method for Ash from Petroleum Products
- D524** Test Method for Ramsbottom Carbon Residue of Petroleum Products
- D975** Specification for Diesel Fuel Oils
- D1266** Test Method for Sulfur in Petroleum Products (Lamp Method)
- D1298** Test Method for Density, Relative Density, or API Gravity of Crude Petroleum and Liquid Petroleum Products by Hydrometer Method
- D1552** Test Method for Sulfur in Petroleum Products by High Temperature Combustion and Infrared (IR) Detection or Thermal Conductivity Detection (TCD)
- D1796** Test Method for Water and Sediment in Fuel Oils by the Centrifuge Method (Laboratory Procedure)
- D2622** Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-ray Fluorescence Spectrometry
- D2709** Test Method for Water and Sediment in Middle Distillate Fuels by Centrifuge
- D3605** Test Method for Trace Metals in Gas Turbine Fuels by Atomic Absorption and Flame Emission Spectroscopy

¹ This specification 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, Non-Aviation Gas Turbine, and Marine 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.

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