



Designation: D8579 – 24

Standard Specification for Polyalkylene Glycol Lubricants Used in Gas Turbines¹

This standard is issued under the fixed designation D8579; 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.

1. Scope

1.1 This specification¹ covers water insoluble and oil soluble polyalkylene glycol based (PAG) lubricants used in gas turbine lubrication systems.

1.2 This specification is intended to define the properties of water insoluble or oil soluble polyalkylene glycol-based turbine lubricating oils that are functionally interchangeable with existing oils of this type, are compatible with most existing machinery components, and with appropriate field maintenance, will maintain their functional characteristics. Auxiliary systems, like hydraulics, gearboxes, and couplings, are also lubricated by the same lubrication systems.

1.3 This specification is intended to define only new lubricating fluids before it is installed in the machinery.

1.4 It is possible that other water insoluble and oil soluble polyalkylene glycol-based turbine lubricants that do not meet this specification may perform satisfactorily in some turbines.

1.5 This specification does not include API Group I-IV or non-PAG based API Group V oils. For mineral oil and synthetic (API group I, II, III, or IV) fluids used to lubricate steam or gas turbines, the user is referred to the current version of Specification [D4304](#). The ISO 8068, DIN 51515-1, or DIN 51515-2 may also be of useful reference. For polyol ester fluids used to lubricate land-based gas turbines, the user is referred to the current version of military specification MIL-PRF-23699 for fluid performance requirements. For phosphate ester fluids used as turbine lubricants or steam turbine electro-hydraulic control (EHC) fluids, the user is referred to the current version of Specification [D4293](#) for fluid performance requirements.

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

1.7 *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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.

1.8 *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

[D92](#) Test Method for Flash and Fire Points by Cleveland Open Cup Tester

[D97](#) Test Method for Pour Point of Petroleum Products

[D130](#) Test Method for Corrosiveness to Copper from Petroleum Products by Copper Strip Test

[D445](#) Test Method for Kinematic Viscosity of Transparent and Opaque Liquids (and Calculation of Dynamic Viscosity)

[D664](#) Test Method for Acid Number of Petroleum Products by Potentiometric Titration

[D665](#) Test Method for Rust-Preventing Characteristics of Inhibited Mineral Oil in the Presence of Water

[D892](#) Test Method for Foaming Characteristics of Lubricating Oils

[D974](#) Test Method for Acid and Base Number by Color-Indicator Titration

[D1500](#) Test Method for ASTM Color of Petroleum Products (ASTM Color Scale)

[D2270](#) Practice for Calculating Viscosity Index from Kinematic Viscosity at 40 °C and 100 °C

[D2272](#) Test Method for Oxidation Stability of Steam Turbine Oils by Rotating Pressure Vessel

[D2422](#) Classification of Industrial Fluid Lubricants by Viscosity System

[D2783](#) Test Method for Measurement of Extreme-Pressure Properties of Lubricating Fluids (Four-Ball Method)

[D3339](#) Test Method for Acid Number of Petroleum Products by Semi-Micro Color Indicator Titration

¹ This specification 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.C0](#) on Turbine Oils.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at www.astm.org/contact. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.