



Standard Specification for Unleaded Aviation Gasoline Containing a Non-hydrocarbon Component¹

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1. Scope*

1.1 This specification covers Grades UL82 and UL87 unleaded aviation gasolines, which are defined by this specification and are only for use in engines and associated aircraft that are specifically approved by the engine and aircraft manufacturers, and certified by the National Certifying Agencies to use these fuels. Components containing hetero-atoms (oxygenates) may be present within the limits specified.

1.2 A fuel may be certified to meet this specification by a producer as Grade UL82 or UL87 aviation gasoline only if blended from component(s) approved for use in these grades of aviation gasoline by the refiner(s) of such components, because only the refiner(s) can attest to the component source and processing, absence of contamination, and the additives used and their concentrations. Consequently, reclassifying of any other product to Grade UL82 or Grade UL87 aviation gasoline does not meet this specification.

1.3 **Appendix X1** contains an explanation for the rationale of the specification. **Appendix X2** details the reasons for the individual specification requirements.

1.4 The values stated in SI units are to be regarded as the standard. The values given in parentheses are provided for information only.

2. Referenced Documents

2.1 *ASTM Standards:*²

- D86** Test Method for Distillation of Petroleum Products at Atmospheric Pressure
- D130** Test Method for Corrosiveness to Copper from Petroleum Products by Copper Strip Test
- D357** Method of Test for Knock Characteristics of Motor

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.J0.02 on J2 Spark and Compression Ignition Aviation Engine 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.

- Fuels Below 100 Octane Number by the Motor Method; Replaced by D 2700 (Withdrawn 1969)³
- D381** Test Method for Gum Content in Fuels by Jet Evaporation
- D873** Test Method for Oxidation Stability of Aviation Fuels (Potential Residue Method)
- D909** Test Method for Supercharge Rating of Spark-Ignition Aviation Gasoline
- D910** Specification for Aviation Gasolines
- 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
- D2386** Test Method for Freezing Point of Aviation Fuels
- D2392** Test Method for Color of Dyed Aviation Gasolines
- D2622** Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-ray Fluorescence Spectrometry
- D2699** Test Method for Research Octane Number of Spark-Ignition Engine Fuel
- D2700** Test Method for Motor Octane Number of Spark-Ignition Engine Fuel
- D3120** Test Method for Trace Quantities of Sulfur in Light Liquid Petroleum Hydrocarbons by Oxidative Microcoulometry
- D3231** Test Method for Phosphorus in Gasoline
- D3237** Test Method for Lead in Gasoline by Atomic Absorption Spectroscopy
- D3338** Test Method for Estimation of Net Heat of Combustion of Aviation Fuels
- D4052** Test Method for Density, Relative Density, and API Gravity of Liquids by Digital Density Meter
- D4057** Practice for Manual Sampling of Petroleum and Petroleum Products
- D4171** Specification for Fuel System Icing Inhibitors
- D4294** Test Method for Sulfur in Petroleum and Petroleum Products by Energy Dispersive X-ray Fluorescence Spectrometry
- D4529** Test Method for Estimation of Net Heat of Combustion of Aviation Fuels

³ The last approved version of this historical standard is referenced on www.astm.org.

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