



Standard Specification for Grade 82 Unleaded Aviation Gasoline¹

This standard is issued under the fixed designation D 6227; 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 Grade 82 unleaded aviation gasoline defined by this specification is for use only in engines and associated aircraft that are specifically approved by the engine and aircraft manufacturers, and certified by the National Certifying Agencies to use this fuel. This fuel is not considered suitable for use in other engines and associated aircraft that are certified to use aviation gasolines meeting Specification D 910.

1.2 A fuel may be certified to meet this specification by a producer as Grade 82 UL aviation gasoline, only if blended from component(s) approved for use in Grade 82 UL 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, re-classifying of any other product to Grade 82 UL 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:

- D 86 Test Method for Distillation of Petroleum Products²
- D 130 Test Method for Detection of Copper Corrosion from Petroleum Products by the Copper Strip Tarnish Test²
- D 357 Method of Test for Knock Characteristics of Motor Fuels Below 100 Octane Number by the Motor Method³
- D 381 Test Method for Existent Gum in Fuels by Jet Evaporation²
- D 873 Test Method for Oxidation Stability of Aviation Fuels (Potential Residue Method)²
- D 909 Test Method for Knock Characteristics of Aviation Gasolines by the Supercharge Method⁴

¹ This test method is under the jurisdiction of ASTM Committee D-2 on Petroleum Products and Lubricants and is the direct responsibility of Subcommittee D02.J0.02 on Aviation Gasoline Specifications.

Current edition approved June 10, 1999. Published August 1999. Originally published as D 6227-98. Last previous edition D 6227-98.

² *Annual Book of ASTM Standards*, Vol 05.01.

³ Discontinued 1969, See *Annual Book of ASTM Standards*, Part 17, Replaced by D 2700.

⁴ *Annual Book of ASTM Standards*, Vol 05.04.

- D 910 Specification for Aviation Gasolines²
- D 1266 Test Method for Sulfur in Petroleum Products (Lamp Method)²
- D 2386 Test Method for Freezing Point of Aviation Fuels²
- D 2392 Test Method for Color of Dyed Aviation Gasolines²
- D 2622 Test Method for Sulfur in Petroleum Products by X-Ray Spectrometry⁵
- D 2700 Test Method for Motor Octane Number of Spark-Ignition Engine Fuel⁵
- D 3120 Test Method for Trace Quantities of Sulfur in Light Liquid Petroleum Hydrocarbons by Oxidative Microcoulometry⁵
- D 3231 Test Method for Phosphorus in Gasoline⁵
- D 3237 Test Method for Lead in Gasoline by Atomic Absorption Spectroscopy⁵
- D 3338 Test Method for Estimation of Heat of Combustion of Aviation Fuels⁵
- D 4057 Practice for Manual Sampling of Petroleum and Petroleum Products⁵
- D 4171 Specification for Fuel System Icing Inhibitors⁵
- D 4294 Test Method for Sulfur in Petroleum Products by Energy Dispersive X-Ray Fluorescence Spectroscopy⁵
- D 4529 Test Method for Estimate of Net Heat of Combustion of Aviation Fuels⁵
- D 4809 Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter (Intermediate Precision Method)⁶
- D 4815 Test Method for Determination of MTBE, ETBE, TAME, DIPE, *tertiary*-Amyl Alcohol, and C₁ to C₄ Alcohols in Gasoline by Gas Chromatography⁶
- D 4953 Test Method for Vapor Pressure of Gasoline and Gasoline Oxygenate Blends (Dry Method)⁶
- D 5059 Test Method for Lead in Gasoline by X-Ray Spectroscopy⁶
- D 5190 Test Method for Vapor Pressure of Petroleum Products (Automatic Method)⁶
- D 5191 Test Method for Vapor Pressure of Petroleum Products (Mini Method)⁶
- D 5453 Test Method for Determination of Total Sulfur in Light Hydrocarbons, Motor Fuels, and Oils by Ultra Violet Fluorescence⁶
- D 5482 Test Method for Vapor Pressure of Petroleum Products (Mini Method/Atmospheric)⁶

⁵ *Annual Book of ASTM Standards*, Vol 05.02.

⁶ *Annual Book of ASTM Standards*, Vol 05.03.