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Standard Test Method for Estimation of Net Heat of Combustion of Aviation Fuels¹

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1. Scope

1.1 This test method covers the estimation of the net heat of combustion at constant pressure in metric (SI) units, megajoules per kilogram.

1.2 This test method is purely empirical, and it is applicable only to liquid hydrocarbon fuels derived by normal refining processes from conventional crude oil which conform to the requirements of specifications for aviation gasolines or aircraft turbine and jet engine fuels of limited boiling ranges and compositions as described in Note 1.

NOTE 1—The estimation of the net heat of combustion of a hydrocarbon fuel from its aniline point temperature and density is justifiable only when the fuel belongs to a well-defined class for which a relationship between these quantities has been derived from accurate experimental measurements on representative samples of that class. Even in this class, the possibility that the estimates can be in error by large amounts for individual fuels should be recognized. The JP-8 fuel, although not experimentally tested, has properties similar to JP-5 and Jet A fuels and can be considered in the same class. The classes of fuels used to establish the correlation presented in this test method are represented by the following applications:

Fuel	Specification
Aviation gasoline	MIL-G-5572
Aviation gasoline fuels:	Specification D 910
Grades 100/130, 100LL	ASTM D910
Grades 80, 82, 100/130, and 115/145	Specification D 6227
—and 115/145	DERD-2485
	DEF STAN 91-90
	NATO Code F-18
JP-4, Jet B, Avgat/FSII	MIL-T-5624
	DERD-2454
	DERD-2486
	NATOMIL-DTL-5624
Aviation turbine fuels:	MIL-DTL-5624
JP-4, Avgat/FSII	DEF STAN 91-88
	NATO Code F-40
JP-5, Avgat/FSII	MIL-T-5624
JP-5, Avgat/FSII	MIL-DTL-5624
	DEF STAN 91-86
	NATO Code F-44

¹ This test method is under the jurisdiction of ASTM Committee D-2 D02 on Petroleum Products and Lubricants and is the direct responsibility of Subcommittee D02.05 on Petroleum, Coke, and Carbon Materials.

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