

## Heat Capacity Measurements of Aviation Turbine Fuels

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Petroleum refinery operations and related processes require knowledge of heat capacity data over a wide range of temperatures. For example, heat capacity data are instrumental to the design of plant equipment, as well as to process decisions related to issues such as prolonged storage or low temperature operability. Furthermore, heat capacity can be used to evaluate other basic thermodynamic properties of a fuel. In this work, specific heat capacity has been measured for seven aviation turbine fuel samples: Jet A, Jet A-1, JP-4, JP-5, JP-7, JP-8, and JP-10. All measurements were made using modulated differential scanning calorimetry over the combined temperature range of 223 to 453 K. Experimental data, including an assessment of the associated expanded uncertainties, will be presented. Additionally, measurement results will be compared to available literature data and to existing surrogate mixture models.