

Heat Capacities of Dimethyl Carbonate from 289 K to 357 K

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The heat capacity of substance is not only one of the most important thermophysical properties, but also is characteristic of the structure of a substance. It is widely used in physics and chemistry as well as in chemical engineering, energy resource and material engineering. Dimethyl carbonate as an oxygen containing additive, is used to improve gasoline's performance and reduce exhaust emissions. The heat capacities of dimethyl carbonate were measured from 289 K to 357 K by means of an automated adiabatic calorimeter developed previously for heat capacity from 240 K to 400 K. The heat capacities of C₇H₁₆ (n-heptane) were measured with the calorimeter before this experiment, and the deviation of heat capacities between our results and the literature amounts to 0.56 % for C₇H₁₆.