Isobaric Heat Capacity for Eight Ionic Liquids with Potential Use as Lubricants

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Isobaric molar heat capacity was measured within the temperature range (283.15 - 338.15) K with a micro DSC III calorimeter for eight ionic liquids. Since phase transitions were observed for two of them, these were also studied with a DSC Q1000 calorimeter. Isobaric molar heat capacity increases with temperature and it presents the usual strong positive correlation with the molar mass of the ionic liquids. The calorimetric analysis of the observed transitions revealed that they correspond to solid-liquid and solid-solid phase changes. Finally, a group contribution method was used for heat capacity prediction for three of the ionic liquids, obtaining good agreement with the experimental data.