Compressed Liquid Densities of Carbon Dioxide– N,N-Dimethylformamide and Thiophene - Carbon Dioxide (CO_2) – N,N-Dimethylformamide (DMF) Mixtures via a Vibrating Tube Densimeter from 313 to 363 K and 21 MPa.

A. Zúñiga-Moreno, O. Elizalde-Solis, and L.A. Galicia-Luna[C,S]

Instituto Politecnico Nacional
Esiqie, Lab. Termodinamica
Edif. Z, 1 Piso, Col. Lindavista
C.P. 07738, Mexico, D.F.
lagalicia@dsi.com.mx

PvT properties in a liquid phase were determined for Carbon Dioxide– N,N-Dimethylformamide and Thiophene - Carbon Dioxide (CO_2) – N,N-Dimethylformamide (DMF) mixtures from 313 to 363 K and up to 21 MPa with an uncertainty better than $\pm$ 0.05 %. The classical calibration method of the vibrating tube densimeter was used with N_2 and H_2O as reference fluids.

The liquid densities Carbon Dioxide– N,N-Dimethylformamide and Thiophene - Carbon Dioxide (CO_2) – N,N-Dimethylformamide (DMF) mixtures reported in this work are correlated with the Starling and Han equation of state (BWRS EoS) using a least square optimization, with a relative deviation lower than $\pm$ 0.2 % for both systems.