Experimental Study on the \( p-T-x \) Properties of HFO1234yf + HC600a Gaseous Mixtures

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The pressure-density-temperature-composition (\( p-\rho-T-x \)) properties of 2,3,3,3-tetrafluoroprop-1-ene (HFO1234yf) + isobutane (HC600a) were measured based on a compact single-sinker densimeter. The experiment covered the temperature range from (270 to 300) K, pressure range from (0.1 to 0.5) MPa, and mole fraction of HFO1234yf range from (0.2677 to 0.8630). The overall standard uncertainties for temperature, pressure, composition, and density are 5 mK, 200 Pa, 0.0005, and 0.08 %, respectively. The virial and PR-VDW equations of state were used to correlate the experimental results, and good agreement was found. The average absolute relative pressure deviations between the experimental results and the calculated values from the two equations are 0.103 % and 0.150 %, respectively, while the density deviations are 0.108 % and 0.158 %, respectively.