Liquid (p-rho-T) Measurements of R1130(E)

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The azeotropic blend of R1336mzz(Z) (1,1,1,4,4,4-hexafluoro-2-butene) and R1330(E) (trans-1,2-dichloroethene), known as R514A, is under consideration as an alternative to R-123 (2,2-dichloro-1,1,1-trifluoroethane) for use in chillers. A reliable mixture model for this system requires accurate and wide-ranging equations of state for each of the pure components. Currently, no such equation exists for R1130(E) due to the scarcity of available experimental data. In an effort to rectify this, the compressed liquid densities of R1130(E) were measured from 270 K to 470 K and up to 40 MPa using a vibrating-tube densimeter. The results are presented here, along with comparisons to existing literature data.