

Prediction of the Viscosity of a Compressed Liquid Refrigerant Blend

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The Vesovic-Wakeham (VW) method used for the prediction of the viscosity of mixtures has been tested with a large number of saturated liquid refrigerant mixtures (Royal et al., *Int. J. Refrigeration* **2005**, 28, 311-319), among other systems. The root mean square deviation of the predictions from the experimental viscosity data was 3.6 %, the bias was -1.9 % and the maximum deviation was -17.2 %. However, as those authors stated, it was not clear, at that stage, if the observed deviations were due inherently to the method or to the uncertainty of the input viscosity data on the pure components. The main goal of the present paper is to test the predictive capabilities of the VW method by reducing the influence of external factors. For this purpose, compressed liquid viscosity data for the azeotropic blend (R125+R143a), known as R507A, as well as viscosity data for the compressed liquid pure components, obtained with the same experimental method (Avelino et al. *J. Chem. Eng. Data* **2008**, 53, 53-56; idem **2006**, 51, 1672-1677) have been used. The present endeavor fulfills the more general goal of testing the VW method for the first time with compressed liquid mixtures of polar components. The tests performed have shown a good general agreement of the predictions with the experimental results.