

# Thermophysical properties of Bromohexane + ethanol in a temperature region and local atmospheric pressure

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## Abstract

Knowledge of physical properties of liquid mixtures is essential for the understanding of molecular interactions existing between various species in a mixture, and thus the experimental determination of physical properties at different temperatures covering the whole composition range is almost a necessity from both theoretical and practical point of view. In this work we report the densities, sound speeds, and related thermodynamic excess properties, namely excess molar volumes and excess isentropic compressibilities, measured at temperatures from 283.15 K to 333.15 K under atmospheric pressure conditions for binary mixtures of 1-bromohexane + ethanol. The densities and sound speeds are measured using the density and sound speed analyzer DSA5000M by Anton Paar. Redlich-Kister polynomial is used to correlate the thermodynamic excess properties to test the quality of experimental data. Excess properties give insights into the molecular interactions between involved molecules and the peculiarities of their packing in the mixture. This research contributes to the thermodynamic database for the studied systems, offering essential novel data for validating and refining predictive models and equations of state.

*Keywords: density, sound speed, binary mixtures, bromohexane, temperature*

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