

Volumetric Properties of Binary Mixtures of Glycerol +1-Butanol or +2-Butanol at Several Temperatures

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Abstract : Densities of glycerol + 1-butanol or 2-butanol mixtures were measured over the temperature range 293.15 to 303.15 K at atmospheric pressure, over the entire composition range, with a vibrating tube densimeter. Excess molar volumes, apparent and partial molar volumes of glycerol and butanol, thermal isobaric expansivities of the mixture and partial molar expansivities of the components were calculated. The excess molar volumes of the mixtures are negative at all temperatures, and deviations from ideality increase with increasing temperature. Excess molar volumes were fitted to the Redlich-Kister equation. Partial molar volumes of glycerol decrease with increasing butanol concentration.

Keywords : 1-Butanol, 2-Butanol, density, excess molar volume, glycerol, partial molar property, thermal isobaric expansivities

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