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Excess molar volumes of binary mixtures of 2,2,2-trifluoroethanol with water, or acetone, or 1,4-difluorobenzene, or 4-fluorotoluene, or α, α, α -trifluorotoluene or 1-alcohols at a temperature of 298.15 K and pressure of 101 kPa

Mounia Sassi, Zadjia Atik *

Faculty of Chemistry, University of Sciences and Technology Houari Boumediene, P.O. Box 32, El-Alia, 16111 Bab-Ezzouar, Algiers, Algeria

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Abstract

Excess molar volumes V_m^E of binary mixtures of 2,2,2-trifluoroethanol with water, or acetone, or methanol, or ethanol, or 1-alcohols, or 1,4-difluorobenzene, or 4-fluorotoluene or α, α, α -trifluorotoluene were measured in a vibrating tube densimeter at temperature 298.15 K and pressure of 101 kPa. The V_m^E extrema are: 1.540 cm³ · mol⁻¹ for (2,2,2-trifluoroethanol + 1-heptanol); 1.452 cm³ · mol⁻¹ for (2,2,2-trifluoroethanol + 1-hexanol); 1.238 cm³ · mol⁻¹ for (2,2,2-trifluoroethanol + 1-butanol); 0.821 cm³ · mol⁻¹ for (2,2,2-trifluoroethanol + 4-fluorotoluene); 0.817 cm³ · mol⁻¹ for (2,2,2-trifluoroethanol + ethanol); 0.647 cm³ · mol⁻¹ for (2,2,2-trifluoroethanol + methanol); 0.618 cm³ · mol⁻¹ for (2,2,2-trifluoroethanol + acetone); 0.605 cm³ · mol⁻¹ for (2,2,2-trifluoroethanol + α, α, α -trifluorotoluene); 0.485 cm³ · mol⁻¹ for (2,2,2-trifluoroethanol + 1,4-difluorobenzene); and -0.656 cm³ · mol⁻¹ for (2,2,2-trifluoroethanol + water). The limiting excess partial molar volumes are estimated.

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* Corresponding author. Fax: +213-21247311.

E-mail address: atik_zadjia@yahoo.fr (Z. Atik).