

Excess molar enthalpies for the binary and ternary mixtures of ether compounds (di-isopropyl ether, propyl vinyl ether) with ethanol and isooctane at 303.15 K

황인찬, 박소진*, 곽해연, 한규진¹
충남대학교 공과대학 화학공학과; ¹대덕대학 유도탄약과
(sjpark@cnu.ac.kr*)

Carbon-oxygen bond of ethers is not easily cleaved and these characteristics make ethers as inert solvents in many organic synthesis and in lubricating oil, agricultural pesticides, food, and flavors industry. Some ether compounds are used increasingly for gasoline additives recently. Studies on the behavior of mixing process are of great importance for developing separation processes and theoretical understanding of the nature of molecular interaction. However the mixing properties for ether compounds are still not readily available in spite of their increasing usage. In this work, we report the molar excess enthalpies (HE) data at 303.15K under atmospheric pressure for the binary systems of di-iso propyl ether(DIPE) + ethanol, DIPE + isooctane, ethanol + isooctane, PVE + ethanol and PVE + isooctane. Isooctane. The measured HE data was correlated well with Redlich-Kister polynomial. Additionally, infinitely dilute partial molar excess enthalpies for each binaries are calculated with fitted parameters and isoclines of HE for ternary systems, DIPE or PVE + ethanol + isooctane calculated by using Radojkovic equation.