Isothermal vapor-liquid equilibrium for the azeotropic systems, MTBE(or TAME) + methanol with trihexyltetra decylphosphonium chloride at 333.15 K

이재연, 황인찬, 박소진[1,*]
충남대학교; [1]충남대학교 화학공학과
(sjpark@cnu.ac.kr*)

Ionic liquids (ILs) are being extensively evaluated as green solvents alternatives to conventional organic solvents in a variety of industrial processes. The use of ILs in chemistry and electrochemistry has been studied for some decades. Only recently, researchers have focused on the suitability of ILs as selective solvents in the field of separation technology. ILs could be a suitable compound to act either as extracting solvent or as entrainer for the separation of azeotropic systems by means of extractive distillation.

In present work, shift of azeotropic point at 333.15K for the azeotropic systems {methyl-*tert*-butyl ether (MTBE) + methanol} and {*tert*-amylmethyl ether (TAME) + methanol} with trihexyltetra decylphosphonium chloride. It was reported by using headspace gas chromatography(HSGC). The influence of phosphonium-based ILs with respect to their entrainer efficiency in extractive distillation and as an extracting agent in solvent extraction was investigated. The experimental binary VLE data were correlated with using the NRTL and UNIQUAC equations.