Measurement and Correlation of Vapor-Liquid Equilbrium for the Multi-component Systems with Epichlorohydrin

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In the various chemical engineering processes design, ECH (Epichlorohydrin) is famous for the synthesis polymer. ECH is known as principal material in the production of epoxy resins, synthetic epoxy resins, synthetic glycerin, epichlorohydin elastomers and surfactants. Separation process plays an important role of ECH production. ECH is normally separated from mixture, and selection of proper extraction solvent is important. VLE (Vapor-Liquid Equilibrium) data is essential for design and operation of separation processes. In this study, VLE phase compositions were measured for the binary system composed of ECH, toluene and benzene. To measure the solubility of this system, VLE measurement apparatus, a dynamic recirculating all-glass cell (Labodest model), was used and the compositions were analyzed by GC (Gas Chromatography). Measured VLE data were correlated by PR, SRK and NLF-HB (Nonrandom Lattice Fluid with Hydrogen Bonding) Equation of State.