Measurement and Correlation of Liquid-Liquid Equilibrium for the Systems Composed of Epichlorohydrin, Water, Methanol and Ethyl Benzene

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In the various fields of separation process design, liquid-liquid equilibrium data play important roles. These equilibrium data is an important basis for design and operation of separation processes. Epichlorohydrin (ECH) is used as a raw material to manufacture epoxy resin and epoxy molding compound. ECH is normally separated from mixture containing water and methanol and selection of proper extraction solvent is important. In this study, liquid-liquid equilibrium phase compositions were measured for the ternary system composed of EHC, water, methanol and ethyl benzene. To measure the solubility of this system, a stir-type LLE measurement apparatus was used and compositions were analyzed by a gas chromatography. Measured LLE data were correlated by UNIQUAC, NRTL and NLF-HB (Nonrandom Lattice Fluid with Hydrogen Bonding) Equation of State.