

## High Pressure Vapor-Liquid Equilibrium of the Binary Carbon Dioxide + Isoamyl Acetate System

권정훈, 서명도, 강정원\*

고려대학교

(jwkang@korea.ac.kr\*)

Acetates, the rated high products, are often used in the various fields of chemical and biological engineering. Specially, isoamyl acetate is one of the natural flavors widely used in food, cosmetic and pharmaceutical industries. Recently, production of acetates using enzymes in supercritical fluid emerges as an alternative for conventional synthesis processes. In enzyme kinetics study, the thermodynamic behaviors of vapor-liquid equilibrium (VLE) and reaction equilibrium play an important role. High pressure VLE data were measured for binary carbon dioxide and isoamyl acetate system at 313.15K and 323.15K. To measure the solubility of isoamyl acetate in carbon dioxide, a circulating type apparatus with on-line gas chromatography was used in this study. The experimental data were also correlated by the Peng-Robinson and nonrandom lattice fluid with hydrogen bonding (NLF-HB) equation of state. The relative accuracy of the data was discussed for the measured and calculated data of carbon dioxide and isoamyl acetate system.