

VLE(Vapor-liquid equilibria) for the binary system of 1,1-difluoroethane(HFC-152a)  
+ propane(R290)

김아람, 임종성<sup>1,\*</sup>

서강대학교 화공생명공학과;

<sup>1</sup>서강대학교 화공생명공학과 초임계/열역학 연구실

(limjs@sogang.ac.kr\*)

HCFCs and HFCs, which are the replacement of CFC refrigerants, have actually high GWP (Global Warming Potential). Light hydrocarbons are known to be a nice solution for reducing GWP because they are rather cheap, plentiful and eco-friendly chemicals. Also, GWP is very low. In this work, VLE data for binary mixture of propane (R-290) + 1, 1-difluoroethane (HFC-152a) at two equally spaced temperatures between 273.15 and 343.15 K were measured by using a circulation-type equilibrium apparatus. The experimental data were correlated with the Peng-Robinson equation of state using the Wong-sandler mixing rule combined with the NRTL excess Gibbs free energy model and the Carnahan-Starling-De Santis equation of state. Almost all the calculated values with this model give good agreement with the experimental data. Azeotropic behavior has been observed in all experimental conditions.