

Measurement of Vapor-Liquid Equilibria for the Binary Mixture of 1,1,1,2,3,3,3-  
Heptafluoropropane  
(HFC-227ea) + n-butane(R600)

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After having announcing the restriction of using CFC, many countries which are most developed countries started to find replacement of CFC. The movement of studies for new refrigerants was quick in action so there are many reports about the new refrigerants. Although a lot of studies for the replacement were announced, developing new refrigerants are continuously proceeded by many scientists and engineers all over the world. Since the most optimal replacement material is needed in the future.

In this work, VLE data for binary mixture of HFC-227ea + n-butane at three temperatures 283.15, 293.15 and 303.15K were measured by using a circulation-type equilibrium apparatus. The experimental data were correlated with the Peng-Robinson equation of state used the Wong-Sandler mixing rule with combine NRTL excess Gibbs free energy model. Almost all the calculated values with this model give a good agreement with the experimental data and these system exhibit azeotropes.