

Liquid-Liquid-Vapor Phase Equilibria of a Binary Carbon Dioxide + Formic Acid Mixture System

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Binary phase equilibrium data were obtained for the carbon dioxide + formic acid system at temperatures from 315 to 338 K. Multiphase behavior (liquid-liquid-vapor) was found, and the split points were checked using a variable-volume view-cell apparatus. The phase transitions were within a temperature range of 318 to 330 K and a pressure range of 80 to 98 bar. In order to obtain more accurate equilibrium data, a circulating type apparatus with on-line gas chromatography was used in this study. A result of this study is that the binary mixture of carbon dioxide and formic acid shows type III fluid phase behavior.