

Isobaric Vapor–Liquid Equilibria for the Binary Systems {1,2-dichloropropane + 1-propanol, or + 1-butanol} at 101.3 kPa

김문갑*, Dipak Sen
경북대학교 응용화학공학부
(mg_kim@knu.ac.kr*)

Isobaric vapor–liquid equilibria at 101.3 kPa were measured for binary systems of 1,2-dichloropropane(1,2-DCP) with 1-propanol and 1-butanol using an all-glass, dynamic-recirculating still (Labodest 602/D model) equipped with a Cottrell circulation pump. The vapor and liquid phase compositions were analyzed with a digital refractometer.

All binary systems present a minimum-boiling-point azeotrope with 56 mol % 1,2-DCP at $T=361.15$ K for {1,2-DCP+ 1-propanol} and 86 mol % 1,2-DCP at $T=369.05$ K for {1,2-DCP+ 1-butanol} systems. The results were determined to be thermodynamically consistent according to the point-to-point consistency and Herington tests. The data were correlated with five liquid-phase activity coefficient models (Margules, van Laar, Wilson, NRTL, UNIQUAC).