Excess Molar Volumes and Excess Molar Enthalpies of Binary Systems {1,2-dichloropropane + 2-propanone, or + 2-butanone } at T=298.15 K and 101.3 kPa

김문갑*
경북대학교 나노소재공학부
(mg_kim@knu.ac.kr*)

The excess molar volumes V^E and excess molar enthalpies H^E at T=298.15 K and atmospheric pressure for the binary systems of 1,2-dichloropropane with 2-alkanones (2-propanone and 2-butanone) have been determined from density and heat flux measurements, respectively. The densities have been measured by using a digital vibrating-tube densimeter whereas heat flux measurements have been carried out by using an isothermal micro-calorimeter with a flow-mixing cell. Both V^E and H^E values of the binary mixtures are negative over the whole composition range. The minimum values of VE and HE are varying from -0.1040 cm3·mol-1 (2-propanone) to -0.1525 cm3·mol-1 (2-butanone) and -257.4 J·mol-1 (2-propanone) to -406.8 J·mol-1 (2-butanone) around x1 (1,2-DCP) = 0.50～0.55, respectively. The experimental results of V^E and H^E values were fitted to the Redlich-Kister equation to correlate the composition dependence of both excess properties and have been qualitatively discussed.