

Excess Molar Enthalpies and Excess Molar Volumes of {1,2-dichloropropane + 2-alkoxyethanol acetates} at 298.15 K and 101.3 kPa

디박, 김문갑*

상주대학교

(mgkim@sangju.ac.kr*)

Excess molar enthalpies, H^E and excess molar volumes, V^E over the whole range of compositions have been measured for binary mixtures 1,2-dichloropropane with ethylene glycol monomethyl ether acetate(EGMEA), ethylene glycol monoethyl ether acetate(EGEEA), and ethylene glycol monobutyl ether acetate(EGBEA) at 298.15K and atmospheric pressure using an isothermal microcalorimeter with a flow mixing cell and a digital vibrating-tube densimeter respectively. All the H^E of the binary mixtures showed an exothermic effect (negative values) which increases with the increase in carbon number of the 2-alkoxyethanol acetate, showing minimum values varying from -374 Jmol^{-1} (EGMEA) to -428 Jmol^{-1} (EGBEA) around 0.54–0.56 mole fraction of 1,2-DCP. The V^E of the mixtures has been shown positive for EGMEA, S-shaped for EGEEA, and negative for EGBEA. The experimental results of H^E and V^E values were fitted to the Redlich-Kister equation to correlate the composition dependence of both excess properties and a qualitative molecular interpretation is presented.