Modeling the Phase Behavior in Mixtures of Drugs with Pure Alkanols at Different Temperatures

임준혁, 신문삼[1], 이주호[2], 김화용*
서울대학교; [1]을지대학교; [2]고려대학교
(hwayongk@snu.ac.kr*)

The solubility of drugs were measured in 6 alkanols (ethanol, 1-propanol, 1-butanol, 1-pentanol, 1-hexanol, 1-heptanol) at temperature ranging from 278.15 to 318.15 K.
The quasi-chemical nonrandom lattice fluid theory (QLF) equation of state (EOS) was applied to calculating solubilities of drugs in alkanols. QLF shows reasonable agreement with experimental data.
Activity coefficient approaches were also used for correlation of drugs to compare with EOS approach (QLF). Activity coefficient for solubilities of drugs in alkanols have been calculated by means of the NRTL, UNIQUAC and Wilson equations and with them were correlated solubility data that were compared with the experimental ones. All three correlation results are in good agreement with the experimental data.