Understanding the dissociation phenomenon of sulfuric acid and phosphoric acid aqueous solution

이봉섭, 박병흥[1,†]
강원대학교; [1]한국교통대학교
(b.h.park@ut.ac.kr[†])

The equilibrium constant K_{eq} is required to evaluate the degree of dissociation of acid/base in aqeuous solution. In this work, the equilibrium constant is obtained from experimental pK_a value. The determined equilibrium constant is then used to predict the degree of dissociation for sulfuric acid and phosphoric acid aqueous solution. Their dissociation are shown the redissociation phenomenon and the COSMO-SAC model combined Pitzer–Debye–Hückel (PDH) model is used to evaluate their degree of dissociations and to understand the reason. The different pK_a value leads to different degree of dissociation. In addtional, their pH and vapor pressure in aqueous solutions. The activity coefficients are critical for accurate determination of the degree of deprotonation of acid over a wide concentration range.