



Thermodynamic Functions, Solubility and Density of Catechol in Pure Water, Methanol and Their Binary Solvent Mixtures at 293.15 to 313.15K Temperatures

Chandrakant S. Aher*

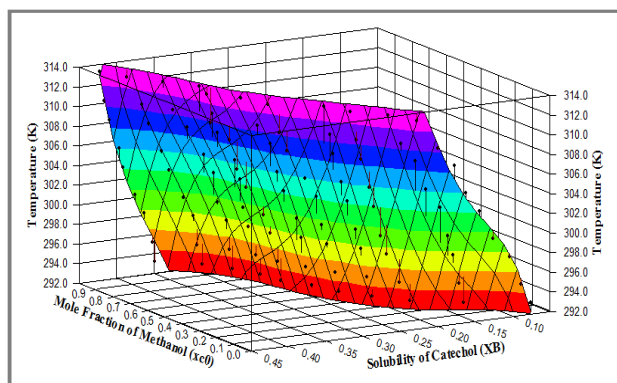
Department of Chemistry, M.S.G. College Malegaon Camp, Malegaon, Dist. Nashik-423105, **INDIA**
Email: chandsaher1980@rediffmail.com

Accepted on 29th May, 2019

ABSTRACT

Solubility of catechol in water, methanol and in water-methanol binary mixtures have been experimentally measured using a gravimetric method at temperatures 293.15, 295.15, 298.15, 300.15, 303.15, 305.15, 308.15, 310.15 and 313.15K. Catechol solubility values are correlated with temperature by using the Apelblat equation. The combined nearly ideal binary solvent (NIBS)-Redlich-Kister equation is used to fit experimental solubility data in mixed solvents at constant temperature. Thermodynamic functions including ΔH^0_{soln} , ΔG^0_{soln} and ΔS^0_{soln} of catechol in different solvents are obtained from the modified van't Hoff equation.

Graphical Abstract



Keywords: Catechol, Solubility, Density, Apelblat equation.