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Solubility modelling and preferential solvation for 3-nitrobenzaldehyde in *N,N*-dimethylformamide + (ethanol, *n*-propanol or *n*-butanol) solvent mixtures

Xinbao Li^a, Chao Cheng^b, Yang Cong^b, Cunbin Du^b, Hongkun Zhao^{b,*}

^a *School of Environmental & Municipal Engineering, North China University of Water Resources and Electric Power, ZhengZhou, He'nan 450011, People's Republic of China*

^b *College of Chemistry & Chemical Engineering, YangZhou University, YangZhou, Jiangsu 225002, People's Republic of China*

Corresponding author. Tel: + 86 514 87975568; Fax: + 86 514 87975244.

E-mail address: hkzhao@yzu.edu.cn (H.K. Zhao).

ABSTRACT

The solubility of 3-nitrobenzaldehyde in mixed solvents of *N,N*-dimethylformamide + ethanol, *N,N*-dimethylformamide + *n*-propanol and *N,N*-dimethylformamide + *n*-butanol were determined experimentally by using the isothermal dissolution equilibrium method within the temperature range from (273.15 to 298.15) K under 101.2 kPa. The mole fraction solubility of 3-nitrobenzaldehyde increased with increasing temperature and mass fraction of the *N,N*-dimethylformamide (DMF). At the same temperature and mass fraction of DMF, the mole fraction solubility of 3-nitrobenzaldehyde in ethanol was greater than those in the other two systems. The obtained solubilities were correlated by employing Jouyban-Acree, van't Hoff-Jouyban-Acree

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