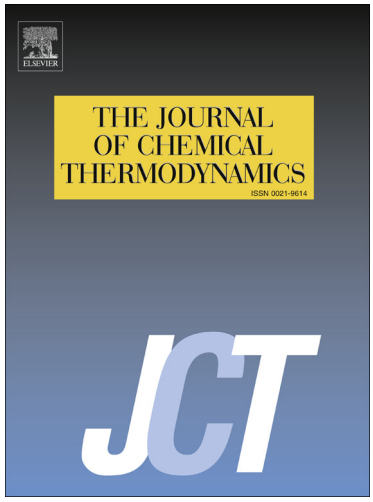

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Solubility modelling, solvent effect and preferential solvation of carbendazim in aqueous co-solvent mixtures of *N,N*-dimethylformamide, methanol, ethanol and *n*-propanol

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ABSTRACT

The equilibrium solubility of carbendazim in solvent mixtures of *N,N*-dimethylformamide (DMF, 1) + water (2), methanol (1) + water (2), ethanol (1) + water (2) and *n*-propanol (1) + water (2) were determined experimentally by using the saturation shake-flask method at the temperatures ranging from (278.15 to 318.15) K under atmospheric pressure (101.1 kPa). The solubility of carbendazim increased positively with increasing temperature and molar fraction of organic solvents in each binary system. The minimum solubility was observed in neat organic solvents. The solid phase was tested by X-ray power diffraction, which showed that no polymorphic transformation, solvate formation or crystal transition during entire experiments