

Temperature dependence of the rate constants of heterogeneous electron-transfer reactions

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Abstract

The aim of this work was to use faradaic impedance in studying solvent effects on the preexponential factor of the rate constants k_s of one-electron reduction of a number of organic compounds at mercury. The standard free energies of activation of the reactions studied correlate with the dielectric properties of the solvents, and decrease in the order of acetonitrile-acetone-dimethylformamide-benzonitrile. Secondly the solvent influences not only the free energy of activation but also the value of the preexponential factor.
