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Electrochemical studies of certain nitro substituted pyrazolin-5-ones

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Abstract. The polarographic behavior of 1-(Toluenyl sulfonyl)-3-amino-4-(2'-nitro aryl hydrazono)-2-pyrazolin-5-one and 1-(Toluenyl sulfonyl)-3-amino-4-(4'-nitro aryl hydrazono)-2-pyrazolin-5-one is investigated in the acidic as well as in basic media. The compounds gave two well defined, diffusion controlled, irreversible waves in Britton-Robinson buffers of pH range 1.0–7.0. In alkaline medium three well defined, diffusion controlled and irreversible waves were obtained. Effect of various solvents, cations and surfactants on the reduction is presented. The effect of substituent and its correlation with the Hammett substituent constant (δ) is detailed. Based on the results, a detailed reduction mechanism in acidic as well as basic media is proposed.

Keywords: Pyrazolin-5-ones; Polarographic behavior, Effect of various parameters, Reduction mechanism.

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