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Potentiometric Investigation of the Effects of Several Substituents on the Basicity of Benzilidene-o-hydroxyaniline

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Abstract: Chloro-, bromo-, iodo-, nitro-, methoxy- and hydroxy-substituted benzilidene-o-hydroxyaniline were prepared in order to investigate the effects of substituents on the basicity of benzilidene-o-hydroxyaniline. For each substituent, three isomers -- ortho, meta and para -- were synthesised. Schiff bases were titrated potentiometrically with perchloric acid in nitrobenzene solvent at 25^{circ}C. All compounds gave well-shaped titration curves, from which half-neutralisation potentials were calculated. The trend in the values of half-neutralisation potentials of Schiff bases were explained in terms of the nature of the substituents. The applicability of the Hammett equation to the effect of substituents in Schiff bases in nitrobenzene solvent was discussed.

Key words: Schiff bases, nonaqueous media, substituent effect, potentiometric titration.

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