



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**Abstract:** A spectrophotometric study concerning the interaction between A15C5 as n-donor and TCNE, DDQ, TCNQ and bromanil as  $\pi$ -acceptor was been performed in chloroform at 25 °C. The results of TCNE indicate the formation of a 1:1 charge-transfer complex through a nonequilibrium reaction. In the case of DDQ, the formation of 1:2 (A15C5/DDQ) and 1:1 charge-transfer complexes through equilibrium and nonequilibrium reactions is confirmed. The formation constant of the equilibrium step was evaluated from the computer fitting of the absorbance-mole ratio data as  $\log K_f = 5.14 \pm 0.09$ . The  $[A15C5^+ (DDQ)_2^-]$  and  $[A15C5^+ DDQ^-]$  are suggested as the possible 1:2 and 1:1 adducts, respectively. The results of TCNQ are indicative of the gradual formation of two 1:1 equilibrium products. The  $[A15C5^+ TCNQ^-]$  and 7-A15C5-7,8,8-tricyanoquinodimethane are assigned to these adducts and the rate constant and sum of their formation constants are measured. In the case of bromanil, the conversion to a charge-transfer complex through a nonequilibrium reaction is observed. The rate constant of this reaction was determined. Finally, all of the resulting complexes were isolated in crystalline form and the effect of complex formation on IR spectra is discussed.

**Key Words:** Spectrophotometry, Azacrown ethers, TCNQ, DDQ, Bromanil, TCNE

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Turk. J. Chem., **29**, (2005), 647-658.

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