

# Electrochemical Study of Tricarbonyl( $\eta^6$ -cyclooctatetraene)metal(0) Complexes of the Group 6 Elements

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*Dedicated to Professor Cornelius G. Kreiter on the occasion of his 60th birthday*

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Tricarbonyl( $\eta^6$ -cyclooctatetraene)metal(0) complexes of the group 6 elements were prepared by using the procedures described in the literature with some minor modifications and identified by IR and NMR spectroscopy. Their electrochemical behavior was studied by using cyclic voltammetry in dichloromethane solution containing 0.1 M tetrabutylammonium tetrafluoroborate as supporting electrolyte. Their oxidation and reduction potentials were measured and discussed in terms of the frontier energy levels in connection with the UV-Visible electronic absorption spectral data. In order to elucidate the mechanism of electrooxidation of the complexes, constant potential electrolysis was performed for one representative example, tricarbonyl( $\eta^6$ -cyclooctatetraene)chromium(0). The IR monitoring of the reaction showed that it is gradually converted to hexacarbonylchromium(0) upon electrolysis at constant potential.

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