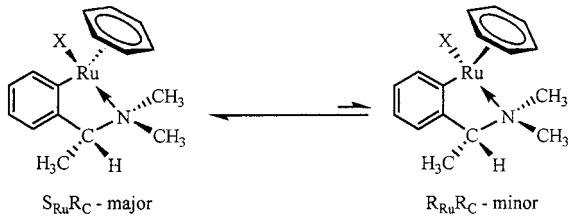
Correspondence

Configurational Stability at Ruthenium Revisited

Sir: Recently, Brunner and Zwack[1] investigated the configurational stability at ruthenium of the complexes (η^6-cymene)RuX[$C_6H_4CH(Me)NMe_2$] (X = Cl, I), which were found to exist as two diastereomers that are epimeric at ruthenium by ^{1}H NMR spectroscopy in room-temperature solutions. The authors prepared solutions of the crystals of these complexes in CD_2Cl_2 at −80 °C and measured their ^{1}H NMR spectra at this temperature. The ^{1}H NMR spectra showed only the resonances attributed to the major diastereomer of each complex. Only at higher temperatures were the signals due to the minor diastereomer observed.

We have since revisited three of our previously reported[2] analogous complexes—(η^6-C_6H_6)RuX[$C_6H_4CH(Me)NMe_2$] (X = N_3, NCO, NCS)—by their method. By dissolving crystals of these complexes in acetone-d_6 at −90 °C and obtaining ^{1}H NMR spectra of the resulting solutions at this temperature, we see only the resonances attributed to the major diastereomer of each complex. Epimerization at higher temperatures produces the same equilibrium diastereomeric mixtures that we previously reported[2] within 2 days. Detailed kinetic measurements have not been made. On the basis



of Brunner's report[1] and our current results, we see no reason that similar diastereomeric complexes we have reported[3] in the series (η^6-arene)RuX[C∼N] should be any more configurationally stable at ruthenium. We concede that each complex we have reported may be configurationally labile at ruthenium, contrary to what we had previously postulated.[2,3]

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