

complexes are the *trans*-L-M-L and *trans*-X-M-Y angles. When L = CO, the L-M-L angles are all similar, $108 \pm 3^\circ$, with extreme values being noted for CpMo(CO)₃(ZnBr) (100.9)²¹ and [CpMn(CO)₂(PPh₃)(SnCl₃)]⁺ (115.1°).²¹ When L is a more sterically-demanding phosphine ligand, a wider range of values is found; some representative examples are given in Table IV. Because of the counteracting influences of the apical Cp group, which would favor small P-M-P angles, and the basal X and Y groups, which favor large P-M-P angles, no clear correlation of P-M-P angles with phosphorus cone angles is apparent. In the extreme where X = Y = H and basal steric conflicts are minimized, an unusually small P-M-P angle of 108.6° is in fact observed for *trans*-CpRe(PPh₃)₂H₂.²¹ This tendency is consistent with the previously noted preference for *trans* stereochemistry in hydride chelates, CpM(P^νP)(H)₂.^{7,8}

The *trans* coordination mode of **1** may be similarly attributed to steric interactions. All *cis* complexes CpM(L^νL)(X)(Y) previously reported in the literature incorporate relatively small chelating groups. To the best of our knowledge dppe is the largest chelate previously reported, with a cone angle θ of 125°, which is considerably less than that of dfppe ($\theta = 151^\circ$). Given identical X and Y basal groups, one would anticipate a greater driving force for *trans* coordination in **1** to minimize interactions between dfppe and the cyclopentadienyl group.

Establishing a steric "crossover" point between *cis*- and *trans*-CpM(L^νL)(X)(Y) coordination geometries would provide a useful predictive guideline in future CpML₄ studies. In comparing NMR spectroscopic data of **1** with *cis*-CpMo(dppe)(CO)Cl, we noted the presence of a minor cyclopentadienyl resonance ($\approx 8\%$) in the ¹H NMR spectrum of CpMo(dppe)(CO)Cl at δ 5.13 along with a corresponding singlet in the ³¹P NMR at δ 81.9 that is very close to the average of the phosphorus chemical shifts of the *cis* isomer. It seems probable that these resonances are due to *trans*-CpMo(dppe)(CO)Cl and that in this particular system the free energies of the *cis* and *trans* isomers are closely comparable.

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Supplementary Material Available: A table of complete data collection parameters and full listings of atomic distances and bond angles, anisotropic thermal parameters, and hydrogen atom coordinates and isotropic thermal parameters (9 pages); a listing of calculated and observed structure factors (17 pages). Ordering information is given on any current masthead page.

Additions and Corrections

1989, Volume 28

David P. Fairlie, W. Gregory Jackson,* and George M. McLaughlin: Cobalt-Induced Facile Degradation of Phenylurea to Ammonia, Carbon Dioxide, and Anilinium Ion and Other Reactions of Linkage Isomeric Cobalt(III) Complexes of Phenylurea.

Page 1983. In the abstract, the space group C2/c with Z = 8 is given incorrectly. It should read space group Cc, Z = 4.—W. Gregory Jackson

1990, Volume 29

Ludwig Bär, Helmut Englmeier, Günter Gliemann,* Ulrich Klement, and Klaus-Jürgen Range*: Luminescence at High Pressures and Magnetic Fields and the Structure of Single-Crystal Platinum(II) Binuclear Complexes M_x[Pt₂(POP)₄]_nH₂O (M_x = Ba₂, [NH₄]₄; POP = P₂O₅H₂²⁻).

Pages 1162–1168. The supplementary material was omitted from the original paper. It has now been included, as indicated in the following paragraph.

Supplementary Material Available: Tables of atomic positional and isotropic thermal parameters, anisotropic thermal parameters, and bond lengths and angles (5 pages); listings of observed and calculated structure factors, the last refinement cycle, and difference Fourier syntheses (25 pages). Ordering information is given on any current masthead page.—Ulrich Klement