

monomer, $\text{Pt}(\text{PPh}_3)_2$, from the carbonato-complex probably lies in the relatively vigorous conditions necessary to bring about the reduction in the absence of added ligands.¹

During the reactions of (1a) shown in equations 1 and 2, with the exception of that with carbon monoxide, one mole of carbon dioxide per platinum is evolved. In the case of carbon monoxide 1.8 moles of CO_2 are produced. This, and the oxidation of ethanol and other alcohols to the corres-

ponding aldehyde or ketone indicate that the carbonato-ligand is the source of a usable oxygen atom.

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¹ R. Ugo, G. LaMonica, F. Cariati, S. Cenini, and F. Conti, *Inorg. Chim. Acta*, 1970, **4**, 390, and references therein.

² D. M. Blake and C. J. Nyman, *J. Amer. Chem. Soc.*, 1970, **92**, 5359.

³ P. J. Hayward, D. M. Blake, G. Wilkinson, and C. J. Nyman, *J. Amer. Chem. Soc.*, 1970, **92**, 5873.

⁴ J. Chatt and P. Chini, *J. Chem. Soc. (A)*, 1970, 1538.

⁵ An orange compound $[\text{Pt}(\text{PPh}_3)_2]_n$ thought to be a trimer has been reported. R. D. Gillard, R. Ugo, F. Cariati, S. Cenini, and F. Bonati, *Chem. Comm.*, 1966, 868.