PCP pincher complexes were first synthesized by Moulton and Shaw in 1976. [1] Since then a plethora of new pincher complexes with various applications were reported. [2] We will present the chemistry of PCP pincher complex 1 and its analogues. Hydride 2 was synthesized by reduction of chlorido complex 1 with NaBH₄ and its structure was determined by single-crystal X-Ray diffraction. In the presence of oxygen hydride 2 in solution slowly oxidizes to hydroxide 3. Upon exposure to air hydroxide 3 readily uptakes CO₂ from atmosphere to form a bicarbonato complex 4 whose crystal structure was also elucidated. Until now only one crystal structure with bicarbonate anion as a monodentate ligand on Pt(II) center has been reported. [3] Crystallization of PCP complexes from acidic chloride solutions leads to the formation of a trinuclear 24-membered macrocyclic complex where [PtCl₂] moieties are bridged by phosphine arms of the pincher ligands.

X-ray crystal structure of 2
50 % probability thermal ellipsoids

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