

Rhodium Complex Possessing Pentamethylcyclopentadiene and Phosphite ligands: Synthesis, Structure, and Characterization of $[(\eta^5\text{-Cp}^*)\text{Rh}(\text{P}(\text{OEt})_3)_3](\text{OTf})_2$ ($\text{OTf} = \text{CF}_3\text{SO}_3$)

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A cationic complex $[(\eta^5\text{-Cp}^*)\text{Rh}(\eta^6\text{-2,6-(Me}_2\text{CH)}_2\text{C}_6\text{H}_3\text{NH}_2)](\text{OTf})_2$ ($\text{OTf} =$ trifluoromethylsulfonate, CF_3SO_3^- ; $\text{Cp}^* =$ 1,2,3,4,5-pentamethylcyclopentadiene, C_5Me_5) reacted with triethyl phosphite $[\text{P}(\text{OEt})_3]$ in acetone at room temperature to give a triphosphite complex $[(\eta^5\text{-Cp}^*)\text{Rh}(\text{P}(\text{OEt})_3)_3](\text{OTf})_2$. In this reaction, the starting compound underwent substitution, rather than acid-base reaction that was our original target reaction. In other words, the phosphite acts as a nucleophile rather than a base in this reaction.

