

# Formation and Structure of a Bis(cyclopentadienyl)(formamidinato)zirconium Cation Complex

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Deprotonation of *N,N'*-dicyclohexylformamidine with methyl lithium yields dicyclohexylformamidinyl lithium (**8a**). The X-ray crystal structure analysis of **8a** shows an unsymmetrically formamidinato-bridged THF-stabilized dimer in the crystal. Treatment of diphenylformamidinyl lithium (**8b**) with  $\text{Cp}_2\text{ZrCl}_2$  gives the  $(\kappa^2N,N'$ -diphenylformamidinato) $\text{Cp}_2\text{ZrCl}$  complex **6b** which was also characterized by X-ray diffraction, as was  $(\kappa^2N,N'$ -dicyclohexylformamidinato) $\text{Cp}_2\text{ZrCH}_3$  (**7a**). Treatment of  $(\kappa^2N,N'$ -diphenylformamidinato) $\text{Cp}_2\text{ZrCH}_3$  (**7b**) with  $[\text{Bu}_3\text{NH}^+][\text{BPh}_4^-]$  gave the salt  $[(\kappa^2N,N'$ -diphenylformamidinato) $\text{Cp}_2\text{Zr}^+][\text{BPh}_4^-]$  (**9B**). Its X-ray crystal structure analysis revealed a symmetrical bonding of the formamidinato ligand to the zirconium metal center.

*Key words:* Zirconium, Metallocene Cations, Formamidinato Ligands