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Title:	A new bulky iminophosphonamide as an N,N′-chelating ligand: synthesis and structural characterization of heteroleptic group 13 element complexes
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Keywords:	Iminophosphonamide Heteroleptic Multinuclear NMR
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Abstract:	A sterically demanding iminophosphonamine ligand [(2,6-iPr2C6H3N)P(Ph2)(NtBu)]H (LH) and its lithium derivative [(2,6-iPr2C6H3N)P(Ph2)(NtBu)](Li·2THF) (1) were used to prepare complexes of group 13 elements. The reaction of LH with AlH3·NMe2Et and AlMe3 respectively, affords [LAlH2]2 (2) and LAlMe2 (3). The lithium derivative 1 when treated with the MCl3 compound of group 13 yields [(2,6-iPr2C6H3N)P(Ph2)(NtBu)]MCl2 (M = B (4); Al (5); and Ga (6). Compound 3 on reaction with a Lewis acid B(C6F5)3 generates the cationic complex [{(2,6-iPr2C6H3N)P(Ph2)(NtBu)}AlMe]+ [MeB(C6F5)3]− (7) that slowly undergoes rearrangement to yield [(2,6-iPr2C6H3N)P(Ph2)(NtBu)]AlMe(C6F5) (8) and MeB(C6F5)2. Compounds 1–8 were characterized using multinuclear NMR, EI-MS and IR techniques and the solid state structure of 1–6 and 8 was elucidated by single crystal X-ray diffraction analyses.
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