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Title:	Concise access to iminophosphonamide stabilized heteroleptic germylenes: chemical reactivity and structural investigation
Authors:	Prashanth, B. (/jspui/browse?type=author&value=Prashanth%2C+B.) Singh, Sanjay (/jspui/browse?type=author&value=Singh%2C+Sanjay)
Keywords:	Iminophosphonamide Heteroleptic germylenes Chemical reactivity Multinuclear NMR
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Abstract:	The influence of a sterically demanding iminophosphonamide ligand, [(2,6-iPr2C6H3N)P(Ph2)(NtBu)]H (LH), on the synthesis and stability of a heteroleptic germylene monochloride, [(2,6-iPr2C6H3N)P(Ph2)(NtBu)]GeCl (1), and its reaction chemistry has been discussed. Complex 1 behaves as a Lewis base to form an adduct with Fe(CO)4, namely [(2,6-iPr2C6H3N)P(Ph2)(NtBu)]Ge(Cl)Fe(CO)4 (2). Reaction of 1 with KOtBu or AgOSO2CF3 affords Ge(ii) compounds, [(2,6-iPr2C6H3N)P(Ph2)(NtBu)]GeR (R = OtBu (3), OSO2CF3 (4)). Treatment of complex 1 with elemental sulfur or selenium leads to heavier analogues of germaacid chlorides, [(2,6-iPr2C6H3N)P(Ph2)(NtBu)]Ge(E)Cl (E = S (5), Se (6)). Similarly, compound 3 on reaction with elemental sulfur or selenium produces heavier analogues of germaesters, [(2,6-iPr2C6H3N)P(Ph2)(NtBu)]Ge(E)OtBu (E = S (7), Se (8)). Complexes 1-8 were characterized using multinuclear NMR and EI-MS, and solid state structures of complexes 1-3, 5 and 8 have been elucidated using single crystal X-ray diffraction.
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