Syntheses and Characterization of 1-Haloazagermatranes

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The reaction of tris(dimethylamino)halogermanes, (Me 2 N) 3 GeHal (7, Hal = Cl; 8, Hal = Br), with tris(2-aminoethyl)amines, N(CH 2 CH 2 NHR) 3 (5, R = H; 6, R = Me), yield 1-halo-N,N',N''-azagermatranes (1, X = Cl, R = H; 2, X = Br, R = H; 3, X = Cl, R = Me; 4, X = Br, R = Me). Treatment of 4 with n-butyllithium affords 1-n-butyl-N,N',N''-trimethylazagermatrane (14) in high yield. Reactions of n-BuLi with 7 or (Me 2 N) 4 Ge (13) lead to the formation of (Me 2 N) 3 Ge-n-Bu (15). On treatment of 15 with 5 the 1-n-butylazagermatrane 16 was obtained. The molecular composition and the structures of all new compounds were established by elemental analyses, 1 H and 13 C NMR spectroscopy and mass spectrometry.