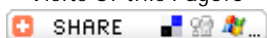




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## Research Details :

**Research Title :** *Crystal structures of organometallic compounds of lithium and magnesium containing the bulky ligands C(SiMe<sub>3</sub>)(<sub>2</sub>)(SiMe<sub>2</sub>X) X = Me, Ph, NMe<sub>2</sub>, or C<sub>5</sub>H<sub>4</sub>N-2*  
*Crystal structures of organometallic compounds of lithium and magnesium containing the bulky ligands C(SiMe<sub>3</sub>)(<sub>2</sub>)(SiMe<sub>2</sub>X) X = Me, Ph, NMe<sub>2</sub>, or C<sub>5</sub>H<sub>4</sub>N-2*

**Descriptipn :** The complex [Li(TMEDA) {C(SiMe<sub>3</sub>)(<sub>2</sub>)SiMe(<sub>2</sub>)NMe<sub>2</sub>}] (1) (TMEDA = N,N,N,N-tetramethylethane-1,2,-diamine) was found to crystallise with an internally coordinated structure like that of [Li(THF)(<sub>2</sub>)C(SiMe<sub>3</sub>)(<sub>2</sub>)SiMe<sub>2</sub>Me<sub>2</sub>] (THF = tetrahydrfuran). In contrast, the compound with Ph in place of NMe<sub>2</sub> crystallised as a dialkylolithate [Li(TMEDA)(<sub>2</sub>)] [Li{C(SiMe<sub>3</sub>)(<sub>2</sub>)(SiMe<sub>2</sub>Ph)}(<sub>2</sub>)] (4). The reaction of 4 with MgBr<sub>2</sub> gave the doubly bromide-bridged lithium-magnesium complex [Li(TMEDA)(μ -Br)(<sub>2</sub>)Mg{C(SiMe<sub>3</sub>)(<sub>2</sub>)(SiMe<sub>2</sub>Ph)} (THF)] (6), and that of [Li(THF){C(SiMe<sub>3</sub>)(<sub>2</sub>)(SiMe<sub>2</sub>C<sub>5</sub>H<sub>4</sub>N-2)}] gave the singly bridged compound [Li(THF)(<sub>3</sub>)(μ -Br)MgBr{C(SiMe<sub>3</sub>)(<sub>2</sub>)(SiMe<sub>2</sub>C<sub>5</sub>H<sub>4</sub>N-2)}] (8). The Grignard reagents [Mg{C(SiMe<sub>3</sub>)(<sub>3</sub>)I(OEt<sub>2</sub>)}(<sub>2</sub>) (10) and [Mg{C(SiMe<sub>3</sub>)(<sub>2</sub>)(SiMe<sub>2</sub>Ph)} I(OEt<sub>2</sub>)}(<sub>2</sub>) (11) were obtained from the reactions between (Me<sub>3</sub>Si)(<sub>3</sub>)Cl and (Me<sub>2</sub>Ph)(Me<sub>3</sub>Si)Cl, respectively, with magnesium metal and shown to have halide-bridged structures. The unsymmetrical dialkylmagnesium [MgBu{C(SiMe<sub>3</sub>)(<sub>2</sub>)(SiMe<sub>2</sub>NMe<sub>2</sub>)}(THF)] (13), was prepared from a mixture of LiBu, 1 and [MgBr<sub>2</sub>(OEt<sub>2</sub>)(<sub>2</sub>)]. (C) 2001 Elsevier Science B.V. All rights reserved.

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