A Gallium-Nitrogen Heteronorbornane with Bulky 'Butyl Substituents

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Z. Naturforsch. 60b, 243-246 (2005); received October 8, 2004

Selective formation of 3,3,6,6-tetra-^{*t*} butyl-1,4-dimethyl-3,6-digallium-1,4-diaza-norborane is achieved by the reaction of bis(lithiomethyl-methylamino)methane with d^{*t*} butylgallium chloride by simultaneous formation of two dative metal-carbon and two metal-nitrogen bonds accompanied by two ring closures. Despite the high steric demand of the ^{*t*} butyl groups, the norborane-like structure is favoured over potential isomers containing three-membered rings and over polymeric aggregation. The compound was identified by elemental analysis, NMR spectroscopy (¹H, ¹³C) and by determination of its crystal structure in which it is present as a monomer.

Key words: Gallium, Nitrogen, Heteronorbornane, Organometallic Compounds, Crystal Structure