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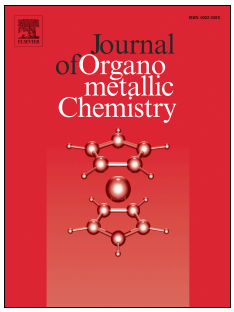

Di(*tert*-butyl)aluminum, -gallium and -indium β-diketonates and β-diketiminates, reactions with oxygen and formation of an unprecedented peroxo-rich hexaperoxotriindium compound

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Di(*tert*-butyl)aluminum, -gallium and -indium β-Diketonates and β-Diketiminates, Reactions with Oxygen and Formation of an Unprecedented Peroxo-rich Hexaperoxotriindium Compound

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Abstract

Reactions of 1,3-di(*tert*-butyl)acetylacetone (2,2,6,6-tetramethyl-3,5-heptanedione), (^{t}Bu$_2$acac)H, with tri(*tert*-butyl)aluminum, -gallium and -indium afforded selectively the corresponding di(*tert*-butyl)metal derivatives (^{t}Bu$_2$acac)M^{t}Bu$_2$ [M = Al (**1**), Ga (**2**), In (**3**)] by release of isobutane. Likewise, diphenyl-β-diketamine [Ph–N=C(Me)]$_2$CH$_2$, (Ph$_2$nacnac)H, reacted with M^{t}Bu$_3$ to generate the compounds (Ph$_2$nacnac)M^{t}Bu$_2$ [M = Ga (**4**), In (**5**)], which represent the first di(*tert*-butyl) complexes of gallium and indium with a β-diketiminato ligand. The reaction of **1** with molecular oxygen afforded an aluminum bisalkoxide (**6**) that is a dimer in the solid