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# Di(*tert*-butyl)aluminum, -gallium and -indium $\beta$ -Diketonates and $\beta$ -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<sub>2</sub>acac)H, with tri(*tert*-butyl)aluminum, -gallium and -indium afforded selectively the corresponding di(*tert*-butyl)metal derivatives (*t*Bu<sub>2</sub>acac)M'*t*Bu<sub>2</sub> [M = Al (**1**), Ga (**2**), In (**3**)] by release of isobutane. Likewise, diphenyl- $\beta$ -diketamine [Ph–N=C(Me)]<sub>2</sub>CH<sub>2</sub>, (Ph<sub>2</sub>nacnac)H, reacted with M'*t*Bu<sub>3</sub> to generate the compounds (Ph<sub>2</sub>nacnac)M'*t*Bu<sub>2</sub> [M = Ga (**4**), In (**5**)], which represent the first di(*tert*-butyl) complexes of gallium and indium with a  $\beta$ -diketiminato ligand. The reaction of **1** with molecular oxygen afforded an aluminum bisalkoxide (**6**) that is a dimer in the solid

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