# Electron Release and Proton Acceptance Reactions of (dpp-BIAN)Mg(THF)$_3$

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(dpp-BIAN)Mg(THF)$_3$ (**1**) (dpp-BIAN = 1,2-bis[(2,6-diisopropylphenyl)imino]acenaphthene) and (PhCOO)$_2$ react with splitting of the peroxide bridge and formation of the dimeric magnesium benzoate [(dpp-BIAN)MgOCOPh(THF)]$_2$ (**2**). The reaction of **1** with PhCOOH yields the dimeric magnesium benzoate [(dpp-BIAN)(H)MgOCOPh(THF)]$_2$ (**3**), whereas **1** and furanyl-2-carboxylic acid react with liberation of hydrogen and formation of (dpp-BIAN)Mg[OCO(2-$C_4H_3O$)]$_2$ Mg(dpp-BIAN)(THF) (**4**). Compounds **2**, **3**, and **4** have been characterized by elemental analysis, IR spectroscopy, and X-ray structure analysis, compound **3** also by $^1$H NMR spectroscopy. The eight-membered metallacycles of the centrosymmetric dimers **2** and **3** are almost completely planar. The two magnesium atoms in **4** show different coordination spheres; one is surrounded by its ligands in a trigonal bipyramidal manner, the other one in a tetrahedral fashion. The Mg···Mg separations in **2**, **3** and **4** are 4.236, 4.296, and 4.030 Å, respectively.

*Key words:* Magnesium, Carboxylates, Diimine Ligands, Crystal Structure Determination