Synthesis, characterization, and catalytic studies of (aryloxido)magnesium complexes.

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Streszczenie

The reaction of $MgBu_2$ with 1 equiv. of four-coordinating (*R*)- or *rac*-*N*,*N*-bis(3,5-di-*tert*-butylbenzyl-2-hydroxy)tetrahydrofurfurylamine (*R*/*rac*-bpthfa-H_2) gave dinuclear homoleptic [Mg(μ-*R*/*rac*-bpthfa)]$_2$ (*R*/*rac*-**2c**) as white powders in54–67 % yields. Analogous reactions of $MgBu_2$ with 2 equiv. of two-coordinating *N*-(3,5-di-*tert*-butylbenzyl-2-hydroxy)-*N*-methylcyclohexanamine (tbpca-H; **1e**-H) and (*S*)-*N*-(3,5-di-*tert*-butylbenzyl-2-hydroxy)-*N*,α-dimethylbenzylamine(*S*-tbpmpa-H; *S*-**1f**-H) gave white crystals of homoleptic mononuclear compounds of general formula [Mg(L)$_2$] (**2e** and *S*-**2f**) in 87–89 % yields. The resulting aminophenolates were characterized by spectroscopic methods and, in the case of *R*-**2c** and *S*-**2f**, by X-ray crystallography. The new complexes *R*/*rac*-**2c**, **2e**, and *S*-**2f**, as well as the previously described homo- and heteroleptic tetranuclear [Mg(ddbfo)$_2$]$_4$ (**2a**), [Mg(thffo)$_2$]$_4$ (**2b**), [Mg_4(μ$_3$-OMe)$_2$(μ,η^2-ddbfo)$_2$(μ,η^1-ddbfo)$_2$(η^1-ddbfo)$_2$(MeOH)$_5$]·CH_3OH·thf (**3a**·CH_3OH·thf) and [Mg_4(μ$_3$,η^2-thffo)$_2$(μ,η^2-thffo)$_2$(Ph_3SiO)$_2$] (**4b**), were tested in the polymerization of lactide to reveal good activity only in the case of mononuclear four-coordinate species grafted with an external donor, benzyl alcohol.

Słowa kluczowe

Aminophenolates, Magnesium, Lactides, polymerization, structure elucidation

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