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Titanium complexes stabilized by a sulfur-bridged chelating bis(aryloxo) ligand as active catalysts for olefin polymerization.

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The mixed-ligand complexes $[Ti_2(\mu\text{-}OR)_2(OR)_2(\kappa^3\text{-}tbop)_2]$ (**1a**) for R = Me and (**1b**) R = Et were prepared by the reaction of $Ti(OR)_4$ and H_2tbop {H_2tbop = 2,2′-thiobis[4-(1,1,3,3-tetramethylbutyl)phenol]} in methanol. Treatment of **1a** and **1b** with $AlMe_3$ led to the substitution of terminal alkoxy groups to create the organometallic compounds $[Ti_2(\mu\text{-}OR)_2(\kappa^3\text{-}tbop)_2(Me)_2]$ (**2a**) for R = Me and (**2b**) for R = Et. Controlled hydrolysis of **2b** causes the evolution of methane and the formation of the titanoxane compounds $[\{Ti_2(\mu\text{-}OEt)_2(\kappa^3\text{-}tbop)_2\}_2(\mu\text{-}O)_2]\cdot 2CH_2Cl_2$ (**3**). Structures of **1a**, **1b**, **2a**, **2b**, and **3** were confirmed by NMR spectroscopy; **1b** and **3** were further investigated with X-ray crystallography. Compounds **1a**, **1b**, **2a**, and **2b** were supported on $MgCl_2$ and when activated with aluminum alkyls, found to effectively polymerize ethylene.

Adres publiczny

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