

Ionization of TiCl_4 and MgCl_2 during the formation of a high-activity α -olefin polymerization catalyst. Crystal structure of $[\text{cis}\text{-}\{\text{C}_2\text{H}_4(\text{CO}_2\text{Et})_2\}_2\text{Cl}_2\text{Ti}][\text{SbCl}_6]_2 \times \text{CH}_2\text{Cl}_2$ and $[\text{Mg}\{\text{C}_2\text{H}_4(\text{CO}_2\text{Et})_2\}_3][\text{MgCl}_4] \times 2\text{CH}_2\text{Cl}_2$.

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The *cis*-dichlorobis(diethyl succinate)titanium(IV) bis(hexachloroantimonate(V))-dichloromethane(1/1) salt, $[\text{cis}\text{-}\{\text{C}_2\text{H}_4(\text{CO}_2\text{Et})_2\}_2\text{Cl}_2\text{Ti}][\text{SbCl}_6]_2 \cdot \text{CH}_2\text{Cl}_2$ (**1**), was prepared by direct reaction of TiCl_4 , diethyl succinate, and SbCl_5 in CH_2Cl_2 . *catena*-(μ -Diethyl succinate-*O,O'*)bis(diethyl succinate-*O,O'*)magnesium(II) tetrachloromagnesate(II)-dichloromethane(1/2), $[\text{Mg}\{\text{C}_2\text{H}_4(\text{CO}_2\text{Et})_2\}_3][\text{MgCl}_4] \cdot 2\text{CH}_2\text{Cl}_2$ (**2**), was formed by substitution of ethyl acetate in $[\text{MgCl}_2(\text{CH}_3\text{CO}_2\text{Et})]$ for diethyl succinate. Both species have been structurally characterized. Complex **1** crystallized in the space group $Pnn2$, with $a = 16.178(5)$, $b = 12.784(4)$, and $c = 10.427(2)$ Å. Compound **2** belongs to the $C2/c$ space group with $a = 26.121(6)$, $b = 10.086(2)$, $c = 17.947(4)$ Å and $\beta = 116.76(3)^\circ$. In the $[\text{cis}\text{-}\{\text{C}_2\text{H}_4(\text{CO}_2\text{Et})_2\}_2\text{Cl}_2\text{Ti}]^{2+}$ cation, the titanium atom is octahedrally coordinated by two mutually *cis* chlorine atoms and four carbonyl oxygen atoms of two chelating diethyl succinate molecules. The $([\text{Mg}\{\text{C}_2\text{H}_4(\text{CO}_2\text{Et})_2\}_3]^{2+})_\infty$ cation in the crystalline state is a linear polymer formed by the $[\text{Mg}\{\text{C}_2\text{H}_4(\text{CO}_2\text{Et})_2\}_2]^{2+}$ units linked by other diethyl succinate ligands. In this cation, each magnesium atom is octahedrally coordinated by six carbonyl oxygen atoms of ethyl succinate molecules. Catalytic activity was found for ethylene polymerization by **1**.

Słowa kluczowe

Anions, Catalysts, Cations, Ethyl groups, Molecules

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