



Synthesis and characterization of new di- and tetra-meric vanadium intermediates of olefin polymerization catalysts. Crystal structure of $[V_2(\mu\text{-Cl})_2Cl_4(\text{MeCO}_2\text{Et})_4]$ and $\{[VOCl_2[CH_2(\text{CO}_2\text{Et})_2]]_4\} \cdot 2CH_2Cl_2$.

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Streszczenie

The direct reaction of VCl_3 and ethyl acetate yields $[V_2(\mu\text{-Cl})_2Cl_4(\text{MeCO}_2\text{Et})_4]$ **1**. The compound $[V_2(\mu\text{-Cl})_2Cl_4\{CH_2(\text{CO}_2\text{Et})_2\}_2]$ **2** was obtained in dichloromethane via the substitution of MeCO_2Et in **1** by ethyl malonate. During crystallization of **2**, under the influence of dioxygen and moisture, the tetrameric compound $\{[VOCl_2[CH_2(\text{CO}_2\text{Et})_2]]_4\} \cdot 2CH_2Cl_2$ **3** was formed. The crystal structures of **1** and **3** have been determined by single-crystal X-ray diffraction studies. The dimeric compound **1** exhibits six-coordinate V^{III} centres [separated by a $V \cdots V$ distance of $3.590(1)\text{\AA}$] surrounded by two terminal Cl atoms, two carbonyl oxygen atoms of co-ordinated ethyl acetate molecules and linked by two bridging Cl atoms. In the tetrameric species **3**, the four vanadium(IV) atoms have equivalent octahedral geometries, being bonded by two mutually *cis* chlorine atoms, two mutually *cis* oxygen atoms. High catalytic activity was found for **1**, **2** and $[V_2(\mu\text{-Cl})_2Cl_4(\text{thf})_4]$ (thf = tetrahydrofuran).

Adres publiczny

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