New Titanium-Based Catalysts for the Synthesis of Polyethylene Terephthalate

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Titanium complexes with chelating aminoethanol ligands were synthesized with the aim to investigate titanium activation in catalytic polyesterification. The titanium complexes $(OH)_2Ti(OCH_2CH_2NR)$ were prepared by direct reaction of $TiCl_4$ with aminoethanol in dichloromethane. Organotitanium derivatives were produced with high yields from aminoethanol using only a one-step procedure. The new titanium catalysts displayed high level of activity for large scale synthesis of polyethylene terephthalate in 20 L pilot plant observed under a general reaction conditions.