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(54) Title: CATALYST COMPOSITIONS DERIVED FROM TITANIUM-CONTAINING MOLECULAR SIEVES

(57) Abstract

Useful catalyst compositions are produced by treating substituted molecular sieves with reactive titanium compounds such as titanium tetrahalides, preferably in the vapor phase at elevated temperatures. The molecular sieve starting materials contain tellurium, boron or germanium oxides in addition to silicon and titanium oxides. Olefins are efficiently transformed to epoxides using these catalyst compositions and an oxidizing agent such as hydrogen peroxide or an organic hydroperoxide.