

Abstract

A noble metal-containing titanasilicate material, characterized in that said material is represented with the oxide form of $x\text{TiO}_2 \cdot 100\text{SiO}_2 \cdot y\text{EO}_m \cdot z\text{E}$, wherein x ranges from 0.001 to 50.0; $(y+z)$ ranges from 0.0001 to 20.0 and $y/z < 5$; E represents one or more noble metals selected from the group consisting of Ru, Rh, Pd, Re, Os, Ir, Pt, Ag and Au; m is a number satisfying the oxidation state of E. The crystal grains of said material contain a hollow structure, or a sagging structure. In said material, the synergistic effect between the noble metal and the titanasilicate are enhanced. As compared with the prior art, the selectivity, catalytic activity and stability of the reaction product are obviously increased in the oxidation reaction, *e.g.* the reaction for preparing propylene oxide by epoxidation of propylene.