

## Abstract

### **Mixed Ti/Si oxides modified by organosilicon groups**

The invention relates to Ti/Si mixed oxides modified by organosilicon groups, to a process for preparing them and to their use as a catalyst.

An oxide according to the present invention is represented by the formula  $(\text{TiO}_2)(\text{SiO}_2)_x(\text{R}_u\text{SiO}_{2-(u/2)})_y$  in which  $2 < x < 100$ ,  $0 < u < 4$ ,  $x + y > 3$ ,  $0.1 < y < 100$ . R is an alkyl group or an aryl group, or else R is a divalent arylene or alkylene group connecting two Si atoms. It carries on its surface halogen atoms X and alkoxide groups OR', attached respectively by an M-X and M-OR' bond, M representing Si or Ti, and R' representing an organic group selected from alkyls and aryls. It has a pore volume  $V_p$  of between 0.2 and 3  $\text{cm}^3/\text{g}$ , and a specific surface area  $S_{\text{BET}}$  of between 100 and 1500  $\text{m}^2/\text{g}$ . It is homogeneous on the micron scale and contains Si-O-Ti bonds.

The oxide is obtained by reacting at least one halide selected from  $\text{TiX}_4$ ,  $\text{SiX}_4$  and  $\text{R}_t\text{SiX}_{4-t}$  with at least one oxygen donor selected from dialkyl ethers  $\text{R}'\text{-OR}'$ , titanium tetraalkoxides  $\text{Ti}(\text{R}'\text{O})_4$ , silicon tetraalkoxides  $\text{Si}(\text{R}'\text{O})_4$ , organoalkoxysilanes  $\text{R}_s\text{Si}(\text{OR}')_{4-s}$  and alcohols  $\text{R}'\text{OH}$ .