ABSTRACT

A process for producing a titanium-containing silicon oxide catalyst satisfying conditions (1) to (3);

(1) an average pore diameter is 10Å or more,

(2) 90% or more of the total pore volume has a pore diameter of 5 to 200Å, and

(3) a specific pore volume is 0.2 cm^3/g or more,

which comprises the following steps:

first step of obtaining a solid containing a catalyst component and a template by mixing and stirring a silica source, a titanium source and a quaternary ammonium ion as a template in a liquid state; second step of removing the template from the solid obtained in the first step by solvent extraction; third step of substituting the solvent used for the extraction, which was contained in the solid after the removal of the template with a solvent which is substantially inert to a silylating agent to be used in the fourth step; and fourth step of obtaining a silylated catalyst by subjecting the solid obtained in the third step to silylation.