ABSTRACT OF THE DISCLOSURE

TITANIUM-CONTAINING SILICON OXIDE CATALYST

A titanium-containing silicon oxide catalyst satisfying all of the following conditions (1) to (4):

(1): an average pore size of 10Å or more,

(2): a pore size of 90% or more of the total pore volume of 5 to 200Å,

(3): a specific pore volume of 0.2 cm^3/g or more, and

(4): a quarternary ammonium ion represented by the following general formula (I) is used as a template and then said template is removed by solvent extraction operation;

$$[NR^1R^2R^3R^4]^+ \qquad (I)$$

wherein, R^1 represents a linear or branched hydrocarbon chain having 2 to 36 carbon atoms, and R^2 to R^4 represent an alkyl group having 1 to 6 carbon atoms,

a method for producing said catalyst, and

a method for producing propylene oxide by reacting propylene with a hydroperoxide, except for ethylbenzene hydroperoxide, in the presence of said catalyst.

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