ABSTRACT

A process for producing an oxirane compound by reacting an olefin with hydroperoxides in the presence of a catalyst wherein said catalyst is obtained by gelling a silicon compound of the following formula (1) (silicon compound (1)), a silicon compound of the following formula (2) (silicon compound (2)) and a titanium compound in water, alcohol solvent or mixed solvent of water and alcohol, removing a solvent in the resulted gel by extraction with supercritical fluid, then, performing drying and silylation treatment:

$$Si(OR^1)_4 \qquad (1)$$

$$(R^2)_mSi(OR^3)_{4-m} \qquad (2)$$

(R^1, R^2 and R^3 independently represent a hydrocarbon group having 1 to 20 carbon atoms. m represents an integer of 1 or 2.)

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