

Abstract

The present invention relates to a composite oxide, the composite oxide comprising 60-95 wt% of aluminum oxide and 5-40 wt% of titanium dioxide. The specific surface area of the composite oxide determined by means of BET method is expressed as $X \text{ m}^2/\text{g}$; the average pore diameter of the composite oxide determined by means of nitrogen adsorption isothermal curve method is expressed as $Y \text{ nm}$, wherein the ratio of X to Y is 5-30; and by means of the determination of X-ray diffraction method, titanium dioxide in an anatase crystalline phase in the composite oxide accounts for 95-100 wt% of the total titanium dioxide, wherein X is in the range of 50-200, preferably X is in the range of 60-180, more preferably in the range of 80-150, and Y is in the range of 5-25 nm. The present invention further provides a hydrogenation catalyst comprising the composite oxide, which catalyst shows a very high vinyl acetylene conversion rate and high 1,3-butadiene selectivity.