

ABSTRACT

Provided is a hydrogenation treatment catalyst for hydrocarbon oil, which is excellent in desulfurization activity while maintaining industrially high productivity, and which can regenerate a high-performance catalyst. On a γ -alumina carrier (a carrier of 100% γ -alumina or an inorganic composite oxide carrier of γ -alumina mixed with foreign element metals), for example, molybdenum and/or tungsten are/is loaded in an amount of 15 to 28 parts by mass in terms of oxide relative to 100 parts by mass of the catalyst, and cobalt and/or nickel are/is in an amount of 2 to 7 parts by mass in terms of oxide, and the content of carbon derived from an organic acid is 2.0 parts by mass or less on an elemental basis. The specific surface area of the catalyst is 180 to 320 m²/g, and the mean pore size measured according to a mercury intrusion method is 50 to 110 Å. The ignition loss of the catalyst is 5.0% or less, and the nitrogen monoxide adsorption amount on the sulfurized catalyst is 8.0 ml/g or more.