

Abstract

Provided are: a hydrotreating catalyst for hydrocarbon oil having a hydrodesulfurization activity additionally improved by: simultaneously and continuously adding an aqueous solution of an acidic compound containing titanium and an aqueous solution containing an alkaline compound to a hydrosol containing an alumina hydrate particle at a temperature of 10 to 100°C and a pH of 4.5 to 6.5; washing the resultant to remove a contaminating ion; forming the washed product after dehydration so as to have a moisture content at which it is formable; drying the resultant; impregnating the dried product with a catalytic component aqueous solution containing at least one kind of periodic table group 6 metal compound, at least one kind of periodic table group 8-10 metal compound, at least one kind of phosphorus compound, and at least one kind of saccharide; and drying the resultant; a manufacturing method for the catalyst; and a hydrodesulfurization treatment method for hydrocarbon oil using the catalyst.