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(54) Title: HYDROPROCESSING CATALYST FOR HEAVY OILS AND ITS USE

(57) Abstract: The present invention pertains to a hydroporcessing catalyst which comprises at least one metal component of Group VIB and/or Group VIII on a carrier comprising silica-alumina, the silica-alumina carrier having a ^{29}Si-NMR spectrum wherein the main maximum of the peak observed in the range of -50 ppm to -110 ppm is between about -80 ppm and about -100 ppm, and wherein the catalyst has an average pore diameter (APD) of about 10 to about 30 nm, a total pore volume of at least about 0.3 ml/g, a surface area of about 130 to about 300 m^2/g, with the %PV[APD ± 5 nm)/(PV<60 nm)] being at least about 50 %. The catalyst may be prepared by a process in which the silicon compound is incorporated into the catalyst composition by way of an organic silicon compound. The catalyst is particularly suitable for effecting at least one of hydro-desulfurisation, hydrodenitrogenation, hydrocracking, and hydrodemetallisation of heavy hydrocarbon feeds.