

A modified catalyst support is described in the form of titanium particles with a volume-median diameter in the range 100 to 1000 μm modified with one or more refractory oxides of metals selected from the group consisting of zirconium, lanthanum, cerium, yttrium and neodymium, wherein the total refractory oxide content of the modified catalyst support is in the range of 0.1 to 15 % by weight, and the modified catalyst support has a pore volume in the range of 0.2 to 0.6 cm^3/g and an average pore diameter in the range of 30 to 60 nm. The modified catalyst support may be used to prepare cobalt Fischer-Tropsch catalysts suitable for use in fixed bed processes.