5545674

SURFACE SUPPORTED COBALT CATALYSTS, PROCESS UTILIZING THESE CATALYSTS FOR THE PREPARATION OF HYDROCARBONS FROM SYNTHESIS GAS AND PROCESS FOR THE PREPARATION OF SAID CATALYSTS

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A supported particulate cobalt catalyst is formed by dispersing cobalt, alone or with a metal promoter, particularly rhenium, as a thin catalytically active film upon a particulate support, especially a silica or titania support. This catalyst can be used to convert an admixture of carbon monoxide and hydrogen to a distillate fuel constituted principally of an admixture of linear paraffins and olefins, particularly a C10+ distillate, at high productivity, with low methane selectivity. A process is also disclosed for the preparation of these catalysts.

5545790

PROCESS FOR THE CATALYTIC CYCLODIMERIZATION OF CYCLIC OLEFINS

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A catalytic process for the dimerization of norbornene and/or norbornadiene using a reduced valence state Group VIB metal oxide as the catalyst, preferably Cr(II) on a porous support such as silica. The product norbornene dimer or norbornadiene dimer is obtained in high yield and high stereospecificity at greater than 90 weight percent of the exo-trans-exo stereoisomer. The norbornene dimer is useful as a high energy density fuel. The norbornadiene dimer can be further functionalized to yield novel chemical intermediates or polymerized or copolymerized with other olefins. The norbornadiene dimer can also be hydrogenated for high energy fuel applications.

5545791

METHOD FOR THE CATALYTIC CONVERSION OF LOWER ALIPHATIC ALCOHOLS TO GASOLINE HYDROCARBONS

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A catalyst for the conversion of lower aliphatic alcohols such as methanol to form petroleum type hydrocarbons comprises one or more metals and/or metal ions supported on a phosphate carrier. Preferred metals include transition metals such as Ti, Ni, Cu, Zn, Rh, Ag, Ir and alkali metals, alkaline earth metals, Al and Sn. The phosphate carrier is preferably aluminium phosphate, zirconyl phosphate, magnesium phosphate, barium phosphate, zinc phosphate or a calcium phosphate compound. The metal should amount to 0.1 to 30% by weight with respect to the phosphate carrier. This catalyst is used to convert lower aliphatic alcohols to produce the gasoline type hydrocarbons at a reaction temperature of 200° to 600°C and a supply rate of 0.75 to 3.0 weight units of alcohol per weight unit of catalyst per hour.