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 28.12.88-US-290936 (12.07.90) B01j-23/89 C07c-01/04  
**Fischer-tropsch catalyst for synthesis gas conversion - contg.  
 platinum, iridium and/or rhodium in addn. to alumina-supported  
 cobalt**  
 C90-103297 R(AT BE CH DE ES FR GB IT LU NL SE) N(AU BR DK  
 FI NO SU)

A Fischer-Tropsch catalyst for converting syngas to hydrocarbons and comprising Co on an alumina support is characterised by the additional presence of Pt, Ir and/or Rh on the support in an amt. less than that of the Co but sufficient to give a finished catalyst with a positive X-ray diffraction pattern (pref. with peaks in the 2- theta range of 65-70 deg.).

#### ADVANTAGE

Presence of the added metal(s) results in a significant increase in syngas conversion activity, even in the absence of added metal or metal oxide promoters. The increased liq. hydrocarbon yield is obtd. with no increase in methane or oxygenate prodn.

#### PREFERRED COMPONENTS

The Co forms pref. 5-60 esp. 10-45, wt.% of the catalyst and the second metal (Pt, Ir and/or Rh) is pref. present

E(10-J2D) H(4-E5, 4-F2E) J(4-E4) N(2-B1, 2-E, 2-F2)

as 0.1-50, esp. 0.5-20, wt.% of the Co content.

The support is pref. a gamma-alumina with surface area at least 100m<sup>2</sup>/g and pore vol. at least 0.3 cm<sup>3</sup>/g.

Pref. also present is 0.1-5 wt.% of a promoter comprising a Gp IIIB, IVB or VIB metal oxide, a lanthanide, an actinide, MgO and/or MnO.

#### EXAMPLE

Tests with a catalyst contg. 12 wt. % Co and 0.1 wt. % Pt showed a CO conversion of 28% with C<sub>2</sub> selectivity 90.1%, CH<sub>4</sub> selectivity 9.4% and CO<sub>2</sub> selectivity 0.5%.

By comparison a catalyst contg. 12% Co but no second metal showed the following values: 7; 91.2; 7.1 and 1.7 resp. (48pp1953SLDwgNo0/10).

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