49561 K/21 E17 H06 BRPE 17.10.81
BRITISH PETROLEUM PLC *EP --79132
17.10.81-GB-031380 (18.05.83) B01j-21/06 B01j-23/68 C07c-27/06 C07c-29/15 C07c-31/04 C07c-45/49

Alcohol prodn. from synthesis gas - using catalyst contg. rhodium, silver, zirconium and molybdenum

C83-048152 D/S: BE DE FR GB IT NL

Prepn. of an oxygenated hydrocarbon product (I) comprising MeOH and EtOH is carried out by contacting synthesis gas at 150-450°C and 1-700 bar with a catalyst comprising a supported mixt. of Rh, Ag, Zr amd Mo.

USES

An i. c. engine fuel compsn. comprising a major amt. of an automotive fuel and a minor amt. of (I) is claimed.

ADVANTAGES

The Rh/Ag/Zr/Mo catalysts give higher alcohol yields than prior art Rh, Rh/Zr, Rh/Ag or Rh/Mo catalysts.

DETAILS

The support is pref. SiO_2 but may also be Al_2O_3, SiO_2-Al_2O_3, MgO, ThO_2, TiO_2, Cr_2O_3, ZrO_2, active carbon or a zeolite. The catalyst pref. contains 0.1-10 wt. % each of Rh, Ag, Zr and Mo, opt. together with 0.1-10 wt. % of one or more of Fe, Mn, Re, W, Ru, Cr, Th and K.

The reaction is pref. effected at 200-400°C and 20-300 bar with a GHSV of $> 10^3$ (pref. 10^4 - 10^6). The H_2:CO molar ratio may be 20 : 1 to 1 : 20, pref. 5:1 to 1 : 5.

EXAMPLE

A catalyst comprising 1.95% Mo, 4.88% Ag, 4.35% Zr and 3.34% Rh on SiO_2 was used to convert a 1 : 2 CO/H_2 mixt. at 275°C and 50 bar (GHSV = 24,000; recycle ratio = 10 : 1). The CO conversion was 52.5%, with 52.1% selectivity for MeOH and 14.0% for EtOH. (18pp367).

(E)ISR: EP--33212 EP--45620 EP--30110 J57109728.

1 Jnl. Ref.