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Hydrocarbon prodn. from synthesis gas using slurry catalyst - of zeolite and active metal (cpds) slurried with aromatic hydrocarbon(s) enabling slurry bed to operate continuously for long period
C85-131246

Hydrocarbons are produced by contacting synthesis gas with a catalyst bed comprising a crystalline aluminosilicate and an active metal or metal compound, by using a slurry bed contg. a liq. for slurry formation added to the catalyst bed.

ADVANTAGE

The slurry bed can be maintained over a long term, so that the reaction for producing hydrocarbons from synthesis gas can be carried out continuously.

EMBODIMENTS

The liq. for slurry formation is an aromatic hydrocarbon, a heavy petroleum hydrocarbon, a silicone oil, petroleum hydrocarbons or lubricating oil fraction. The aromatic hydrocarbon is naphthalene, anthracene or phenanthrene which is aromatic of poly-fused rings and subst. derivs. of which hydrogen atoms are subst. with several

H(4-E5)

1-4C alkyl gps.

The crystalline aluminosilicate is an intermediate pore zeolite. The active metal or metal compound includes any of those capable of reducing carbon monoxide at the low temp. region of 280 - 350°C, such as Fe, Cu, Ni, Co or Fe₂O₃-K₂O-Al₂O₃, which is a catalyst for ammonia synthesis, having particle sizes of 1-100, pref. 10-100μ.

The catalyst is prepared by mixing the respective powders of the crystalline aluminosilicate and the active metal or metal compound at a wt. ratio of 95:5 to 10:90, pref. 75:25 to 25:75.

The mixing wt. ratio of the catalyst to the liq. slurry formation is 5:95 to 40:60, pref. 10:90 to 20:80.

The reaction is carried out at 280-350°C, a pressure of 1-60 Kg/cm² and a hydrogen/carbon monoxide molar ratio in the synthesis gas of 0.1:5. Preferred conditions are 300-340°C, 10-20 Kg/cm² and a hydrogen/carbon monoxide molar ratio of 0.5:2.0. (18pp1684RBHDwgNo0/1).

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