★ AIRP Q52 92-293810/36 ★ EP 501331-A2

Methanol prodn. - by feeding synthesis gas into 1st liq. phase reactor contg. solid methanol synthesis catalyst, reacting, withdrawing effluent gas stream etc. (Eng)

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Prodn. of methanol from synthesis gas feed contg. H2, CO and CO2, comprises (a) introducing the synthesis gas feed into a first liq. phase reactor contg. solid methanol synthesis catalyst in an inert liq.; (b) reacting the synthesis gas in the presence of a catalyst to produce methanol; (c) withdrawing an effluent gas stream contg. methanol, H2, CO and CO2 from the first liq. phase reactor and introducing it into a second liq. phase contg. solid methanol synthesis catalyst in an inert liq.; (d) reacting the effluent gas stream to produce additional methanol; (e) removing heat from the first and second liq. phase reactors to control their temps., so methanol productivity is maximised; and (f) withdrawing a mixed prod. stream contg. methanol, H2, CO and CO2 from the second liq. phase reactor.

USE/ADVANTAGE - For the prodn. of methanol from synthesis gas, where catalyst inventory and activity are maintained in the reactors. A significant increase in methanol prodn. per unit of synthesis gas feed is obtd. and the catalyst utilisation is improved, which increases the amt. of methanol produced per unit of catalyst consumption. Methanol losses in the unreacted synthesis gas are reduced and the methanol concn. in the final reactor effluent is high which allows prod. recovery. (20pp Dwg.No.1/4)

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