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Liq. phase prodn. of methanol from hydrogen and carbon mon:oxide - using solvent mixt. also contg. non-polar organic solvent

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MeOH is prepd. in a liq. reaction medium by reaction of CO with H_2 in the presence of a catalyst system comprising an alkali metal alcoholate (I) and a copper catalyst (II).

The novelty is that the liq. reaction medium in addn. to MeOH and HCO_2Me also contains at least 50% by vol. of a non-polar organic solvent (III) of dielectric constant lower than that of pure MeOH at the same temp.

ADVANTAGE

Incorporating (III) into the reaction mixt. increases the activity of the alcoholate/heterogeneous Cu catalyst system.

PREFERRED CONDITIONS

Reaction is at <240 (pref. 70-150)° C and <100 (esp. 5-60) bar, with mol. ratio CO:H_2 of 1:1-8.

E(10-E4E1) N(2-D, 3-D, 5-A)

SOLVENT

Prefd. (III) are decalin, p-xylene, dioxan, n-butyl stearate, cyclohexane and toluene.

CATALYST

The system pref. comprises LiOMe or NaOEt as (I), and pref. copper chromite as (II).

EXAMPLE

A 1:2 CO/H_2 mixt. was reacted over NaOMe (20 mmol) and a Cu catalyst (NO Applicn. 81.2279) in 50 ml of a solvent contg. 15 vol.% MeOH and 85 vol.% cyclohexane. MeOH prodn. was 156 g/dm³/hr. (control MeOH solvent only 81 g/dm³/hr.); while selectivity to MeOH was 94% (control, 61%). (15pp478 DAHDwgNo0/0).

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