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 SCHERING AG *EP--71-770
 05.08.81-DE-130988 (16.02.83) B01j-23/76 C07c-01/02 C07c-11
 Catalyst converting synthesis gas to linear alpha olefin cpds. -
 contains active component, esp. iron, in excess oxide matrix

A(2-A6, 2-A6A, 4-G1A) E(10-J2C3, 35) H(4-E5, 4-F2E) N(2, 3)

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C83-017238 D/S: E(BE DE FR GB IT NL)

Prepn. of linear α -olefins is effected at 170-340°C and 1-150 bars by contacting synthesis gas with a catalyst (I) comprising an active component (II), pref. Co, Ni, Ru or (esp.) Fe, and a major amt. of an oxide matrix (III), pref. oxides of Ti, Mn or V, the catalyst being pref. alkalinized, esp. with 1-8 wt. % K_2CO_3 .
 (I) is also claimed per se.

ADVANTAGES

(I) has a high selectivity in conversion to linear α -olefins.

DETAILS

The H_2/CO ratio in the synthesis gas is usually 2:1, but, depending on the catalyst, may be 0.3-4:1. The pref'd. reaction temp. with Ni, Co and Ru as (II) is 180-280°C, and with Fe 210-320°C. The pref'd. reaction pressure with Fe and Ru is 1-120 bar, with Ni 1-4 bar, and with Co 1-80

bar. The GHSV is generally 100-1000.

The (III)/(II) weight ratio in the catalyst is pref. 3-18, esp. 4-14. ZnO as additive can improve catalyst activity. Al_2O_3 and Aerosil are suitable as structure-improvers. The catalyst may be activated by pretreatment with H_2 at 350-450°C.

The catalyst is pref. prep'd. by copptn. (e.g. of carbonates) from mixed aq. salt solns., drying and calcining at 300°C, or by mixing the suspensions of ptes. prep'd. separately or by mixing the finely-ground oxides (with promoters), with subsequent heat-treatment in each case. (20pp1492).

(G)ISR: No search report.

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