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 Prod'n. of Fischer-Tropsch catalysts - contg. iron and magnesium on alumina carrier, useful for prodn. of hydrocarbon(s) from carbon mon:oxide and hydrogen

E(10-J2D) H(4-E5, 4-F2E) J(4-E1, 4-E4) N(1-B, 1-C2, 2-A1)

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Hydrocarbon synthesis catalysts, a process for their prepn., and hydrocarbon synthesis processes using the catalysts are claimed. Specifically, the catalyst comprises 30-75 pts. wt. Fe and 5-40 pts. wt. Mg per 100 pts. wt. Al<sub>2</sub>O<sub>3</sub> and is prepd. by impregnating an alumina carrier with an aq. soln. or solns. contg. salts of Fe and Mg, followed by drying, calcining at 700-1200 deg. C and reduction.

ina). The carrier may be impregnated by the dry impregnation technique. The calcining is pref. carried out at 750-800 deg. C and the reduction at 250-350 deg.

The hydrocarbon synthesis is carried out by contacting the H<sub>2</sub>/CO mixt. with the catalyst at 200-350 deg. C, 10-70 bar and a GHSV of 500-5000.

USES

The catalysts are esp. useful as Fischer-Tropsch catalysts with very high activity and very high stability in the conversion of H<sub>2</sub>/CO mixts. having a H<sub>2</sub>/CO ratio of less than 1 into hydrocarbons.

EXAMPLE

An alumina carrier was impregnated with Mg(NO<sub>3</sub>)<sub>2</sub> soln, dried at 120 deg. C, calcined for 2 hours at 400 deg. C, impregnated with a soln. contg. Fe(NO<sub>3</sub>)<sub>3</sub>, Cu(NO<sub>3</sub>)<sub>2</sub> and KNO<sub>3</sub>, dried at 120 deg. C and calcined at 800 deg. C for 16 hours, then reduced at 325 deg. C. The prod. contained 50 pts. Fe, 20 pts. Mg, 2.3 pts. Cu, 4 pts. K, and 100 pts. Al<sub>2</sub>O<sub>3</sub>. The catalyst was used in the conversion of a H<sub>2</sub>/CO mixt. having a H<sub>2</sub>/CO ratio of 0.6. After 25 hours operation at 280 deg. C and with a GHSV of 1000, conversion rate was 93%. After 3150 hours operation, conversion was 80% at 305 deg. C and a GHSV of 350. (13pp513)

DETAILS

The pref'd. catalysts contain 40-60 wt. pts. Fe and 7.5-30 pts. wt. Mg per 100 pts. wt. alumina. They may contain a reduction promoter, such as 0.5-5 wt. % copper, and a selectivity promoter, such as 1-5 wt. % potassium (w.r.t. alum-

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