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Prodn. of Fischer-Tropsch catalysts - contg. iron and chromium on a silica carrier useful for prodn. of hydrocarbon(s) from carbon monoxide and hydrogen

E(10-J2D) H(4-E5, 4-F2E) J(4-E1, 4-E4) N(2-A1, 3-D)

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nique. The calcining is pref. carried out at 350-700 deg. C and the reduction at 350-500 deg. C.

The hydrocarbon synthesis is carried out by contacting the H₂/CO mixt. with the catalyst at 200-350 deg. C, 10-70 bars and a GHSV of 500-5000.

EXAMPLE

A silica carrier was impregnated with a soln. of KNO₃, dried at 120 deg. C, calcined 2 hours at 400 deg. C, impregnated with a soln. of Fe(NO₃)₃ and Cr(NO₃)₃, dried at 120 deg. C, calcined 2 hours at 500 deg. C and reduced at 400 deg. C. The prod. contained 25 pts. Fe, 1 pt. Cr and 2 pts. K together with 100 pts. SiO₂.

The catalyst was used in the conversion of a H₂/CO mixt. having a H₂/CO ratio of 0.5. After 500 hours operation at 280 deg. C and with a GHSV of 1000, the conversion rate was 90%. (11pp513)

Fischer-Tropsch catalysts, a process for their prepn. and hydrocarbon synthesis processes using the catalysts are claimed. Specifically, the catalysts comprise 10-40 pts. wt. Fe and 0.25-10 pts. Cr per 100 pts. wt. SiO₂ and are prepd. by impregnating a silica carrier with an aq. soln. or solns. of salts of Fe and Cr, followed by drying, calcining, and reducing the prod. at 350-750 deg. C.

USE

The catalysts are esp. useful as Fischer-Tropsch catalysts with very high activity and very high stability in the conversion of H₂/CO mixts. having a H₂/CO ratio of less than 1 into hydrocarbons.

DETAILS

The prefd. catalysts contain 20-35 pts. wt. Fe and 0.5-5 pts. Cr per 100 pts. silica. The catalysts may also contain a selectivity promoter such as 1-5 wt.% potassium. The carrier may be impregnated by the dry impregnation tech-