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EXXON RES & ENG CO

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16.08.88-EP-307572 (28.02.90) C07c-01/04

Fischer-tropsch hydrocarbon synthesis - gives increased carbon monoxide conversion using cobalt black catalysts

C90-026097 R(DE FR GB NL)

area below 40 m²/g .

The pressure in the reaction zone is over 1 bar.

EXAMPLE

Test runs were made using Co black catalyst with a powdered quartz diluent and a feed gas comprising 64% H₂, 33% CO, and 4% nitrogen.

Addition of water resulted in products with lower methane and higher 5C+ hydrocarbon content. Also CO conversion was increased from 7-12% to 15-28%. (8pp2042CGDwgNo0/0).

(E) ISR: EP-109702 DE-487379 DE-716853 US2497964
NL--77441.

Fixed bed catalytic process for synthesising 5C+ hydrocarbons comprises; reacting, in a reaction zone at high temps., H₂ and CO substantially free of light hydrocarbons in the presence of added water.

The catalyst comprises Co, and there is no net consumption of water.

USE/ADVANTAGE

In Fischer-Tropsch reactions the process increases the activity of the catalyst, decreases methane prodn., increases the CO conversion, and increases 5C+ hydrocarbon prodn.

PREFERRED EMBODIMENTS

Water (or a precursor) is added to the feed prior to the reaction zone, or is added to the reaction zone.

Water is added at 1-70 vol% on total feed.

The catalyst is Co on a suitable support which has surface

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