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(54) **Title:** PRODUCTION OF LOWER OLEFINS FROM SYNTHESIS GAS

(57) **Abstract:** Disclosed is a process for the production of lower olefins by the conversion of a feed stream comprising carbon monoxide and hydrogen, and catalysts as used therein, such as a Fischer-Tropsch process. By virtue of the invention, lower olefins can be formed from synthesis gas, with high selectivity, and low production of methane. The catalysts used herein comprise an α -alumina support, and a catalytically active component that comprises iron-containing particles dispersed onto the support in at least 1 wt.%. The majority of the iron-containing particles is in direct contact with the α -alumina and is well-distributed thereon. Preferably, the iron-containing particles have an average particle size below 30 nm, and most preferably below 10 nm. The supported catalysts not only show a high selectivity, but also a high catalyst activity and chemical and mechanical stability.



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