

289a Effect of Molybdenum Loading on Iron-Based Fischer-Tropsch Catalyst

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Effects of Mo loading on the properties of activated-carbon (AC) supported Fe-Cu-K catalysts and their performance for Fischer-Tropsch synthesis are studied. Physico-chemical properties studied include particle size, reducibility, and dispersion, and catalytic properties include activity, selectivity and stability. Catalysts were characterized by N₂ adsorption, energy-dispersive spectroscopy, x-ray diffraction, H₂ temperature-programmed reduction and CO chemisorption. Addition of 6% Mo improves catalyst stability without sacrificing activity, but activity is suppressed dramatically over 12% Mo. Segregation of iron active sites, thereby preventing them from agglomerating, and a larger number of active sites on the 6%Mo catalyst are possible reasons for improved stability and higher activity of Mo-promoted catalysts.