

## Effect of magnesium on precipitated iron catalyst for Fischer–Tropsch Synthesis

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In the present study, we have prepared a series of precipitated Fe/K/Cu catalysts promoted with various concentration of magnesium by precipitation method, followed by impregnation method; keeping Cu and K content same. The catalysts were characterized by XRD, N<sub>2</sub> physisorption, TPR, FTIR and TEM techniques. From XRD, the presence of hematite (Fe<sub>2</sub>O<sub>3</sub>) phase was detected in all precipitated iron catalysts and CFe<sub>2.5</sub> phase in all used catalysts. It was found that the degree of reduction decrease with increase in magnesium content. TPR results showed that addition of magnesium facilitated the reduction of Fe<sub>2</sub>O<sub>3</sub> and decrease in reduction temperature was dependant on the concentration of magnesium.