

Hydrogenation of 1-octene by Co-Mo/MCM-41 catalysts

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Abstract The synthesis and characterization of MCM-41 supported Co-Mo catalysts and catalytic hydrogenation of 1-octene to n-octane were discussed. BET specific surface area of MCM-41, calculated from N₂ adsorption/desorption isotherm, was 1690 m²/g. The XRD patterns of the Co-Mo/MCM-41 catalysts show that metal species are finely dispersed and the size of CoO and MoO₃ particles is below the detection limit by XRD. The 1-octene hydrogenation activity of the catalysts decreased with increasing the Co content up to 9 wt.% for the Co-promoted Co-Mo/MCM-41 catalysts with a MoO₃ content of 12 wt.%. All the catalysts show increased hydrogenation activity with increasing reaction temperature in the temperature range from 200 to 350°C.

Keywords: 1-octene conversion, XRD, Co-Mo/MCM-41, BET specific surface area.
