ABSTRACT :

The benzylation of benzene and substituted benzenes reaction employing benzyl chloride as the alkylating agent over Mg-Fe-LDH (Mg/Fe = 2) clay without or with calcination (at 473–1073 K) has been investigated. Hydrotalcite before and after its calcination was characterized for surface area and crystalline phases. The catalyst derived from the hydrotalcite by its calcination at 473–1073 K show high catalytic activity for the benzylation of benzene and other aromatic compounds. The catalytically active species present in the catalyst in its most active form are the oxides of iron on the catalyst surface. The activity of the catalyst calcined at 1073 K for the benzylation of different aromatic compounds is in the following order: benzene> toluene> p-xylene> anisole. Kinetics of the benzene benzylation over these catalysts have also been investigated