

Catalytic oxidation of tetralin over transition metal containing mesoporous molecular sieves

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Oxidation of tetralin has high impact on commercial aspects, since its oxidation product α -tetralone is used for the production of α -naphthol and starting material for the commercial insecticide namely Carbaryl. In addition, α -tetralone can be used as an additive to diesel fuel to enhance the cetane number. In this work, we report our experimental findings on tetralin oxidation over Cr-, Co, and Fe- containing mesoporous MCM-41 and hexagonal aluminophosphate (HMA) catalysts using tert-butyl hydroperoxide (TBHP) as the oxidant and chlorobenzene as the solvent. The reaction results show that HMA metal series showed better performance towards tetralin oxidation than MCM-41 series. The activity of these catalysts followed the order: CrHMA > CoHMA \approx FeHMA. Chromium was more active and selective element than others. A more detailed study of this reaction is being undertaken by varying reaction parameters with different reaction temperature, oxidants, reactants molar ratios, and catalyst loading.