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FLUIDIZED BED APPLICATION IN SYNTHESIS OF 2,6-DIMETHYLPHENOL

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Poly(phenylene oxide) is an engineering polymer which has wide range of industrial applications. An important stage in this material manufacturing is the preparation of monomer: 2,6-dimethylphenol. This monomer preparation was the subject of our investigations. The reaction carried out *via* phenol alkylation with methanol in the fluidized bed. The catalyst, magnesium oxide on silica support has been synthesized. In the reaction of 2,6-dimethylphenol preparation at the temperature of 733K it made possible nearly 100 % phenol conversion with 60% of selectivity to 2,6-dimethylphenol. Better results were obtained when iron-chrome industrial catalyst TZC-3/1 was used. The catalyst is produced by Zakłady Azotowe in Tarnów (Azoty Tarnow). This catalyst in powder form allowed to convert almost 100 % of phenol with 90 % of selectivity to 2,6-dimethylphenol. Such good result was obtained at a lower temperature (603K) than with magnesium oxide catalyst (733K). That suggests that iron-chrome catalysts allow to synthesize 2,6-dimethylphenol with better selectivity than the magnesium oxide catalyst. Another advantage of TZC-3/1 catalyst is its commercial availability and the fact that the reaction is carried out at lower temperature.

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