

论文

阳离子聚合物 / 膨润土对苯酚的吸附及其机理研究

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摘要:

采用阳离子聚合物聚环氧氯丙烷二甲胺(EPI-DMA)和聚二甲基二烯丙基氯化铵(PDMAAC)分别对钠基膨润土进行了改性,研究了改性膨润土吸附苯酚的机理及其主要影响因素。实验结果表明,膨润土经阳离子聚合物改性后,吸附苯酚的能力大大提高。振荡时间、温度、pH值、离子浓度对阳离子聚合物 / 膨润土吸附苯酚的性能均有一定的影响。PDMAAC / 膨润土和EPI-DMA / 膨润土分别在振荡时间为20min和60min时,达到吸附平衡;温度升高,吸附量下降,不利于吸附反应的进行;pH<pKa时,吸附效果较好;离子浓度对苯酚的吸附有加强作用。两种阳离子聚合物 / 膨润土对苯酚的吸附均同时符合Freundlich等温吸附模式。

关键词: 阳离子聚合物 / 膨润土 吸附 苯酚

Adsorption of phenol on cationic polymer / bentonite and the mechanism research

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Abstract:

Two cationic polymer-epichlorohydrin-dimethylamine(EPI-DMA) and poly dimethyldiallylammonium (PDMAAC) as intercalary reagents were respectively used to prepare a series of cationic polymer / bentonites. The adsorption of phenol on cationic polymer / bentonite and major effect factors were studied. The results showed that the adsorption ability of bentonite for phenol was improved greatly after modification. The pH of the solution, temperature, time of reaction and salt concentration have influences on the adsorption. The adsorption equilibrium time of PDMAAC / bentonite and EPI-DMA / bentonite is respectively 20min and 60min. The adsorption ability decreases at higher temperature. When pH<pKa, the adsorption effect is much better. The adsorption isotherm of phenol on both cationic polymer / bentonites fits to the Freundlich equation.

Keywords: cationic polymer / bentonite adsorption phenol

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