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硅胶自环己烷中吸附环己酮和苯甲酸

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摘要 用经不同温度处理的亲水硅胶(表面总羟基浓度不同)和甲基化硅胶(只含有缔合羟基或不同表面浓度的自由羟基的硅胶)为吸附剂, 测定了自环己烷中吸附环己酮和苯甲酸的等温线, 以及几种硅胶样品的红外光谱图, 探讨了表面自由羟基和缔合羟基在溶液吸附中的作用.

关键词 苯甲酸 吸附 表面化学 环己烷 硅胶 环己酮 等温线 溶液化学

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Adsorption of cyclohexanone and benzoic acid from cyclohexane onto silica gel

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Abstract The adsorption isotherms of cyclohexanone and BzOH from cyclohexane onto silica gels, heated at various temperature (200-700? or treated with Me3SiCl were determine at 35? Some of the silica gels were studied by IR. After the surface of silica gels were treated with Me3SiCl, the free OH group disappeared, but the associated OH group did not change, and the adsorption of cyclohexanone and BzOH decreased slightly. This shows that the associated OH groups are not important in the adsorption from solns. On the surface of silica gel, only the free OH groups reacted with Me3SiCl and the amount of adsorption changed correspondingly with the degree of trimethylsilylation. Furthermore, the adsorption from solns. did not take place on the silica surface from which free OH had been removed entirely. These facts indicate that the free OH groups play the role of adsorption centers. Monomol. adsorption shows a max. on the surface of silica gel heated at 400? which suggests that the concentration of the free OH group may have a max. at this temperature

Key words BENZENECARBOXYLIC ACID ADSORPTION SURFACE CHEMISTRY CYCLOHEXANE SILICA GEL CYCLOHEXANONE ISOTHERM SOLUTION CHEMISTRY

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