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RESEARCH NOTES

二氯甲烷酯化活性炭上的吸附动力学参数测定

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摘要

The adsorption of dibenzofuran on three commercial granular activated carbons (ACs) was investigated by dynamic experiment to correlate the adsorption equilibrium and kinetics with the structure of activated carbons. Physical properties including surface area, average pore diameter, micropore area and micropore volume of the activated carbons were characterized by N2 adsorption experiment on ASAP2010. To calculate the adsorption parameters, adsorption isotherm data were fitted to the Langmuir equation, and adsorption kinetic data were fitted to the linear driving force (LDF) diffusion model. From the correlation results, it is concluded that the adsorption equilibrium and diffusion coefficient of dibenzofuran on activated carbon are controlled respectively by the total adsorbent surface area and the adsorbent pore diameter.

关键词 二氯甲烷酯; 活性炭; 吸附动力学; 吸附平衡; 吸附容量; 扩散系数; 吸附速率;
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Adsorption Isotherm and Kinetics of Dibenzofuranon Granular Activated Carbons

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Abstract:The adsorption of dibenzofuran on three commercial granular activated carbons (ACs) was investigated by dynamic experiment to correlate the adsorption equilibrium and kinetics with the structure of activated carbons. Physical properties including surface area, average pore diameter, micropore area and micropore volume of the activated carbons were characterized by N2 adsorption experiment on ASAP2010. To calculate the adsorption parameters, adsorption isotherm data were fitted to the Langmuir equation, and adsorption kinetic data were fitted to the linear driving force (LDF) diffusion model. From the correlation results, it is concluded that the adsorption equilibrium and diffusion coefficient of dibenzofuran on activated carbon are controlled respectively by the total adsorbent surface area and the adsorbent pore diameter.

Key words: adsorption isotherm;diffusion coefficient;chemical compound;dibenzofuran;activated carbon;

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