



ADSORPTION OF N-HEXANE VAPORS ONTO NON-FUNCTIONALIZED HYPERCROSSLINKED POLYMERS (HYPER SOL-MACRONET™) AND ACTIVATED CARBON: EQUILIBRIUM STUDIES

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Abstract

Two non-functionalized hypercrosslinked polymeric resins type Macronet (MN 202 and MN 250) were employed to remove n-hexane vapors from gas phase. A comparison of the equilibrium behavior of these hypercrosslinked resins and a bituminous granular activated carbon was made. The initial n-hexane concentration in the air stream ranged from 2100 to 4500 ppm and the adsorption temperatures were 30°C, 40°C and 50°C. The results showed that the MN 250 presents the higher adsorption capacities of n-hexane, in all studied conditions. The experimental results were fitted to the Freundlich, Langmuir and Dubinin-Raduchkevich equation isotherms, to obtain the characteristic constants of each model. The maximum adsorption capacity for n-hexane, determined by using these model isotherms, decreased in the following order: MN 250 > MN 202 ≥ AC 20.

Key words: VOCs, hexane, adsorption, activated carbon, hypercrosslinked polymeric resins, isotherm

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