## عنوان مقاله:

(Adsorption of volatile organic compounds from aqueous solution by granular activated carbon (GAC

## محل انتشار:

ششمین کنگره بین المللی مهندسی شیمی (سال: 1388)

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## خلاصه مقاله:

Chlorinated hydrocarbons and aromatics are the major volatile organic compounds that contaminate the ground water and industrial waste waters. The best way to overcome this problem is to recover the dissolved compounds in water. In order to evaluate the potential ability of granular activated carbon (GAC) for recovery of volatile organic compounds from water, the equilibrium adsorption was investigated. This study deals with the adsorption of dichloromethane as a typical chlorinated volatile organic compound (VOCs) and toluene as the representative of aromatic volatile organic compounds on a commercial granular activated carbon (GAC). The adsorption isotherms of these two volatile organic compounds on GAC were measured at three different temperatures, toluene at 293, 303 and 313 K and dichloromethane at 298, 303 and 313 K. The experimental data obtained were correlated with different adsorption isotherm models. The Langmuir model is well adapted to the description of dichloromethane adsorption on GAC at all three temperatures, while the adsorption of toluene on GAC was found to be well described by the Langmuir-BET hybrid model at all three temperatures. The heat of adsorption was also calculated based on the thermodynamic based equation of Clausius–Clapeyron, which indicates the adsorption process is endothermic for the both .compounds

## کلمات کلیدی:

Adsorption, Dichloromethane, Toluene, isotherm, Activated carbon

## لینک ثابت مقاله در پایگاه سیویلیکا: