

Supporting Information

Adsorption of Selected Pharmaceuticals and an Endocrine Disrupting Compound by Granular Activated Carbon.

2. Model Prediction

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TABLES

Table 1. Isotherm and Kinetic Parameters as Functions of Preloading Time for F400 Carbon

Parameter	Naproxen	Carbamazepine	Nonylphenol
Freundlich K _F	78.94exp(-0.059t)	79.21exp(-0.021t)	3.60exp(-0.084t)+0.79
Freundlich 1/n	0.64exp(-8.68exp(-0.065t))+0.36	0.0013t+0.37	1.0exp(-0.24exp(-0.11t))
Film diffusion β _L	0.00041+(β _{Lo} -0.00041)exp(-0.124t)	0.00105+(β _{Lo} -0.00105)exp(-0.098t)	0.00185+(β _{Lo} -0.00185)exp(-0.038t)
Surface diffusion D _s	n/a	n/a	3.24-2.81exp(-16.34exp(-0.084t))

t: preloading time in days

n/a: not applicable

FIGURES

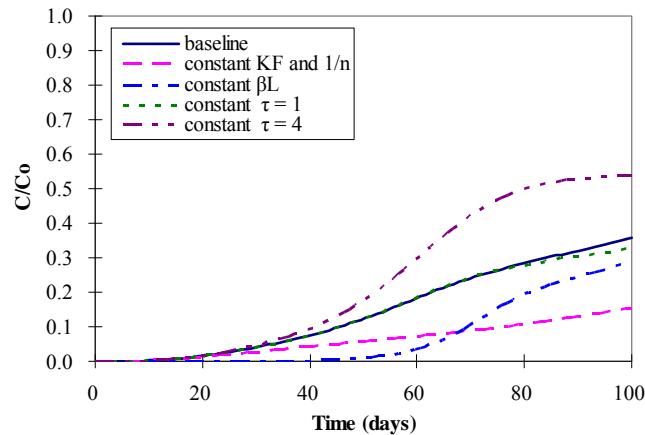


FIGURE 1. Impact of time-variable parameters on model simulation (carbamazepine on F400 carbon)

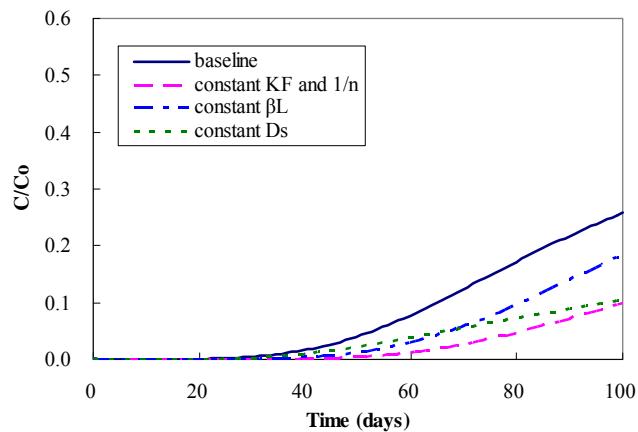


FIGURE 2. Impact of time-variable parameters on model simulation (nonylphenol on F400 carbon)

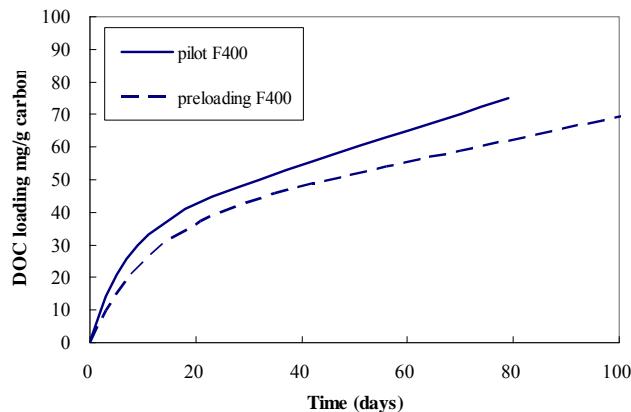


FIGURE 3. Calculated DOC surface loadings in F400 carbon pilot adsorber and preloading columns (based on actual breakthrough data)