

Felis, E., Borok, S., Miksch, K. Assessing the Ability of Some Endocrine Disruptors to Sorb onto Activated Sludge Flocs. *Ochrona Srodowiska* 2011, Vol. 33, No. 2, pp. 49–52.

Abstract: Three substances of choice classified as endocrine disruptors, namely bisphenol A (BPA), 4-n-nonyl-phenol (4NP) and polychlorinated biphenyl No. 7 (PCB7), were analyzed for sorbability in the course of the activated sludge process. The extent of their sorption onto activated sludge flocs was expressed in terms of the solid-water distribution coefficient (K_D). The experiments were performed using samples of activated sludge derived from the Zabrze Srodmiescie Municipal Sewage Treatment Plant and from the Industrial Wastewater Treatment Plant at Zaklady Azotowe Kedzierzyn SA. The experimental values of the K_D coefficient obtained with the sewage sludge amounted to $475 \pm 161 \text{ dm}^3/\text{kg}$ (BPA), $15975 \pm 56 \text{ dm}^3/\text{kg}$ (4NP) and $35452 \pm 5713 \text{ dm}^3/\text{kg}$ (PCB7), those attained with the industrial sludge being $897 \pm 301 \text{ dm}^3/\text{kg}$ (BPA), $\geq 6162 \text{ dm}^3/\text{kg}$ (4NP), and $15499 \pm 526 \text{ dm}^3/\text{kg}$ (PCB7). The values of the solid-water distribution coefficient determined in the course of this study have revealed a high extent of sorption onto activated sludge flocs for all of the substances tested during biological treatment of both municipal sewage and industrial wastewater.

Keywords: Activated sludge, solid-water distribution coefficient (K_D), endocrine disruptor, sorption.