

**Dudziak, M. Evaluation Attempt of Influence of Model Solution Composition on Selected Xenobiotic Degradation upon Oxidation with UV and Hydrogen Peroxide. *Ochrona Srodowiska* 2015, Vol. 37, No. 2, pp. 21–25.**

**Abstract:** Modern technologies of water and wastewater treatment have been increasingly employing various processes of chemical oxidation. These processes generate by-products of often unknown biological activity. This is the reason why attempts at evaluation of the two xenobiotics (bisphenol A, diclofenac) degradation level were made as well as of the change in model solution toxicity in the UV and UV/H<sub>2</sub>O<sub>2</sub> oxidation. Assessment of the advanced oxidation mechanism was performed using deionized water and treated wastewater with analytical standards of tested compounds added as model solutions. It was demonstrated that xenobiotic degradation level was higher when oxidation was carried out in the treated wastewater compared to the deionized water. When deionized water was used as an environmental matrix xenobiotic degradation by-products were formed and affected the model solution toxicity both during the UV and UV/H<sub>2</sub>O<sub>2</sub> process. The toxicity of model solution was a function of the oxidation type, the UV exposure time and the compound being degraded. It becomes evident that during xenobiotic removal in the advanced oxidation process complex phenomena occur that have not yet been fully understood.

**Keywords:** Advanced oxidation processes, bisphenol A, diclofenac, degradation, toxicity.