

## Accepted Manuscript

Title: Photodegradation of ethyl paraben using simulated solar radiation and  $\text{Ag}_3\text{PO}_4$  photocatalyst

Author: Zacharias Frontistis Maria Antonopoulou Athanasia Petala Danae Venieri Ioannis Konstantinou Dimitris I. Kondarides Dionissios Mantzavinos



PII: S0304-3894(16)30358-2  
DOI: <http://dx.doi.org/doi:10.1016/j.jhazmat.2016.04.017>  
Reference: HAZMAT 17625

To appear in: *Journal of Hazardous Materials*

Received date: 10-1-2016  
Revised date: 7-4-2016  
Accepted date: 9-4-2016

Please cite this article as: Zacharias Frontistis, Maria Antonopoulou, Athanasia Petala, Danae Venieri, Ioannis Konstantinou, Dimitris I. Kondarides, Dionissios Mantzavinos, Photodegradation of ethyl paraben using simulated solar radiation and  $\text{Ag}_3\text{PO}_4$  photocatalyst, *Journal of Hazardous Materials* <http://dx.doi.org/10.1016/j.jhazmat.2016.04.017>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Photodegradation of ethyl paraben using simulated solar radiation and  $\text{Ag}_3\text{PO}_4$  photocatalyst

Zacharias Frontistis<sup>a</sup>, Maria Antonopoulou<sup>b</sup>, Athanasia Petala<sup>a</sup>, Danae Venieri<sup>c</sup>,

Ioannis Konstantinou<sup>b,d</sup>, Dimitris I. Kondarides<sup>a</sup>, Dionissios Mantzavinos<sup>a,\*</sup>

<sup>a</sup> Department of Chemical Engineering, University of Patras, Caratheodory 1, University Campus, GR-26504 Patras, Greece

<sup>b</sup> Department of Environmental & Natural Resources Management, University of Patras, 2 Seferi St., GR-30100 Agrinio, Greece

<sup>c</sup> School of Environmental Engineering, Technical University of Crete, Polytechnioupolis, GR-73100 Chania, Greece

<sup>d</sup> Department of Chemistry, University of Ioannina, GR-45110 Ioannina, Greece

\* Corresponding author:

Email: mantzavinos@chemeng.upatras.gr; Tel.: +302610996136; Fax: +30261096953

## Highlights

- $\text{Ag}_3\text{PO}_4$  with a bandgap of 2.4 eV is a photocatalyst highly responsive to visible.
- Factorial design was used to assess important factors for ethyl paraben degradation.
- Ethyl paraben and  $\text{Ag}_3\text{PO}_4$  concentration, time, water matrix are significant factors.
- Dealkylated and decarboxylated transformation by-products have been identified.
- All parabens are slightly estrogenic compared to estradiol.

Download English Version:

<https://daneshyari.com/en/article/4979980>

Download Persian Version:

<https://daneshyari.com/article/4979980>

[Daneshyari.com](https://daneshyari.com)