

Accepted Manuscript

Title: Potential role of engineered nanoparticles as contaminant carriers in aquatic ecosystems: Estimating sorption processes of the cyanobacterial toxin microcystin-LR by TiO₂ nanoparticles

Author: Annette Okupnik Valeska Contardo-Jara Stephan Pflugmacher



PII: S0927-7757(15)30031-5
DOI: <http://dx.doi.org/doi:10.1016/j.colsurfa.2015.06.013>
Reference: COLSUA 19956

To appear in: *Colloids and Surfaces A: Physicochem. Eng. Aspects*

Received date: 28-3-2015

Accepted date: 6-6-2015

Please cite this article as: Annette Okupnik, Valeska Contardo-Jara, Stephan Pflugmacher, Potential role of engineered nanoparticles as contaminant carriers in aquatic ecosystems: Estimating sorption processes of the cyanobacterial toxin microcystin-LR by TiO₂ nanoparticles, Colloids and Surfaces A: Physicochemical and Engineering Aspects <http://dx.doi.org/10.1016/j.colsurfa.2015.06.013>

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.

Potential role of engineered nanoparticles as contaminant carriers in aquatic ecosystems: Estimating sorption processes of the cyanobacterial toxin microcystin-LR by TiO₂ nanoparticles

Annette Okupnik, Valeska Contardo-Jara, Stephan Pflugmacher*

Technische Universität Berlin, Department of Ecotoxicological Impact Research and Ecotoxicology,
Ernst-Reuter-Platz 1, 10587 Berlin, Germany

* Corresponding author

Prof. Dr. Stephan Pflugmacher
Technische Universität Berlin
Institute of Ecology
Department Ecological Impact Research and Ecotoxicology

+49-30-314-29023 (phone)

+49-30-314-29022 (fax)

stephan.pflugmacher@tu-berlin.de

Keywords: microcystin-LR; titanium dioxide nanoparticle; adsorption; kinetics; adsorbent dosage; particle size

Abbreviations

C_0 initial concentration of adsorbate ($\mu\text{g/L}$)

C_e equilibrium liquid-phase of adsorbate ($\mu\text{g/L}$)

V solution volume (L)

m mass of adsorbent (g)

q_e adsorption capacity at equilibrium ($\mu\text{g/g}$)

q_t adsorption capacity at time t ($\mu\text{g/g}$)

k_1 first-order rate constant of pseudo-first-order equation (h^{-1})

k_2 second-order rate constant of pseudo-second-order equation ($\text{g}/\mu\text{g h}$)

Download English Version:

<https://daneshyari.com/en/article/6979017>

Download Persian Version:

<https://daneshyari.com/article/6979017>

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