

Author's Accepted Manuscript

Calibration of a passive sampler based on stir bar sorptive extraction for the monitoring of hydrophobic organic pollutants in water

Branislav Vrana, Lucie Komancová, Jaromír Sobotka



PII: S0039-9140(16)30040-6
DOI: <http://dx.doi.org/10.1016/j.talanta.2016.01.040>
Reference: TAL16292

To appear in: *Talanta*

Received date: 11 September 2015
Revised date: 18 January 2016
Accepted date: 21 January 2016

Cite this article as: Branislav Vrana, Lucie Komancová and Jaromír Sobotka Calibration of a passive sampler based on stir bar sorptive extraction for the monitoring of hydrophobic organic pollutants in water, *Talanta* <http://dx.doi.org/10.1016/j.talanta.2016.01.040>

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 a review of the resulting galley proof before it is published in its final citable 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.

Calibration of a passive sampler based on stir bar sorptive extraction for the monitoring of hydrophobic organic pollutants in water

¹Branislav Vrana, ¹Lucie Komancová and ¹Jaromír Sobotka

Masaryk University, Faculty of Science, Research Centre for Toxic Compounds in the Environment (RECETOX), Kamenice 753/5, 625 00 Brno, Czech Republic

Corresponding author:

Branislav Vrana

Research Centre for Toxic Compounds in the Environment (RECETOX)

Faculty of Science

Masaryk University

Kamenice 753/5, pavilon A29

625 00 Brno

Czech Republic

tel: +420 549 494 975

e-mail: vrana@recetox.muni.cz

Keywords: Stir bar sorptive extraction; Passive dosing; Passive sampling; Polydimethylsiloxane; Priority organic pollutants; Water monitoring

Abstract

A passive sampler based on stir bars coated with polydimethylsiloxane (PDMS) was calibrated for the measurement of time-weighted average concentrations of hydrophobic micropollutants, including polycyclic aromatic hydrocarbons, polychlorinated biphenyls and organochlorine pesticides, in water. Stir bar/water partition coefficients were measured by equilibrating bars with sheets made of silicone rubber material for which partition coefficients had been reported previously. Kinetic parameters characterising the exchange of analytes between stir bars and water were determined under controlled exposure conditions using a passive dosing system. The dosing system consisted of silicone rubber sheets with a large surface area, spiked with analytes. During stir bar sampler

Download English Version:

<https://daneshyari.com/en/article/7678065>

Download Persian Version:

<https://daneshyari.com/article/7678065>

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