

Quantification of chemical contaminants in the paper and board fractions of municipal solid waste - DTU Orbit (08/11/2017)

Quantification of chemical contaminants in the paper and board fractions of municipal solid waste

Chemicals are used in materials as additives in order to improve the performance of the material or the production process itself. The presence of these chemicals in recyclable waste materials may potentially affect the recyclability of the materials. The addition of chemicals may vary depending on the production technology or the potential end-use of the material. Paper has been previously shown to potentially contain a large variety of chemicals. Quantitative data on the presence of chemicals in paper are necessary for appropriate waste paper management, including the recycling and re-processing of paper. However, a lack of quantitative data on the presence of chemicals in paper is evident in the literature. The aim of the present work is to quantify the presence of selected chemicals in waste paper derived from households. Samples of paper and board were collected from Danish households, including both residual and source-segregated materials, which were disposed of (e.g., through incineration) and recycled, respectively. The concentration of selected chemicals was quantified for all of the samples. The quantified chemicals included mineral oil hydrocarbons, phthalates, phenols, polychlorinated biphenyls, and selected toxic metals (Cd, Co, Cr, Cu, Ni, and Pb). The results suggest large variations in the concentration of chemicals depending on the waste paper fraction analysed. Research on the fate of chemicals in waste recycling and potential problem mitigation measures should be focused on in further studies.

General information

State: Published

Organisations: Department of Environmental Engineering, Residual Resource Engineering, Environmental Chemistry

Authors: Pivnenko, K. (Intern), Olsson, M. E. (Intern), Götze, R. (Intern), Eriksson, E. (Intern), Astrup, T. F. (Intern)

Number of pages: 12

Pages: 43-54

Publication date: 2016

Main Research Area: Technical/natural sciences

Publication information

Journal: Waste Management

Volume: 51

ISSN (Print): 0956-053X

Ratings:

BFI (2017): BFI-level 2

Web of Science (2017): Indexed yes

BFI (2016): BFI-level 2

Scopus rating (2016): CiteScore 4 SJR 1.354 SNIP 2.044

Web of Science (2016): Indexed yes

BFI (2015): BFI-level 2

Scopus rating (2015): SJR 1.739 SNIP 2.256 CiteScore 4.33

Web of Science (2015): Indexed yes

BFI (2014): BFI-level 2

Scopus rating (2014): SJR 1.777 SNIP 2.482 CiteScore 3.43

Web of Science (2014): Indexed yes

BFI (2013): BFI-level 1

Scopus rating (2013): SJR 1.822 SNIP 2.435 CiteScore 3.39

ISI indexed (2013): ISI indexed yes

Web of Science (2013): Indexed yes

BFI (2012): BFI-level 1

Scopus rating (2012): SJR 1.611 SNIP 2.184 CiteScore 2.91

ISI indexed (2012): ISI indexed yes

Web of Science (2012): Indexed yes

BFI (2011): BFI-level 1

Scopus rating (2011): SJR 1.698 SNIP 2.085 CiteScore 2.99

ISI indexed (2011): ISI indexed yes

Web of Science (2011): Indexed yes

BFI (2010): BFI-level 1

Scopus rating (2010): SJR 1.555 SNIP 1.78

Web of Science (2010): Indexed yes

BFI (2009): BFI-level 1

Scopus rating (2009): SJR 1.502 SNIP 1.899

Web of Science (2009): Indexed yes

BFI (2008): BFI-level 2

Scopus rating (2008): SJR 1.378 SNIP 2.13

Web of Science (2008): Indexed yes

Scopus rating (2007): SJR 1.035 SNIP 1.767

Web of Science (2007): Indexed yes

Scopus rating (2006): SJR 1.046 SNIP 1.749

Web of Science (2006): Indexed yes

Scopus rating (2005): SJR 1.059 SNIP 1.65

Scopus rating (2004): SJR 1.289 SNIP 1.939

Web of Science (2004): Indexed yes

Scopus rating (2003): SJR 0.847 SNIP 1.269

Web of Science (2003): Indexed yes

Scopus rating (2002): SJR 0.561 SNIP 0.874

Scopus rating (2001): SJR 0.456 SNIP 0.696

Web of Science (2001): Indexed yes

Scopus rating (2000): SJR 0.271 SNIP 0.451

Scopus rating (1999): SJR 0.262 SNIP 0.479

Original language: English

Waste Management and Disposal, Additives, EDCs, MSW, Organic pollutants, Phthalates, Recycling, Cadmium, Chemicals, Esters, Incineration, Lead, Waste incineration, Waste management, Waste paper, Chemical contaminants, Mitigation measures, Potential problems, Production process, Production technology, Quantitative data, Municipal solid waste

DOIs:

10.1016/j.wasman.2016.03.008

Source: FindIt

Source-ID: 2298616066

Publication: Research - peer-review › Journal article – Annual report year: 2016