Degradability of aged aquatic suspensions of C60 nanoparticles

Degradability of aged aquatic suspensions of C60 nanoparticles

In this study, aged aqueous suspensions of C(60) (nC(60)) were investigated in the respirometric OECD test for ready biodegradability. Two suspensions of nC(60) were prepared by stirring and aged under indirect exposure to sunlight for 36 months. ATR-FTIR analyses confirmed the presence of C(60)-structures in the suspensions. Samples of the nC(60) suspensions (20mg/l) were inoculated with activated sludge (30mgTSS/L) and incubated in a mineral medium under aerobic conditions. Since no mineralisation of nC(60) was observed after 28 days of incubation, 5mg/l sodium acetate was added to the media. After additional 20 days, no mineralisation of nC(60) was observed. However, within a few days sodium acetate was completely mineralised, showing that the biomass was not inhibited by the presence of nC(60). Based on results from this simple approach, aged nC(60) can be classified as not ready biodegradable according to the standard OECD test procedure.

General information
State: Published
Organisations: Environmental Chemistry, Department of Environmental Engineering, Optical Sensor Technology, Department of Photonics Engineering
Contributors: Hartmann, N. I. B., Buendia, I. M., Bak, J., Baun, A.
Pages: 3134-3137
Publication date: 2011
Peer-reviewed: Yes

Publication information
Journal: Environmental Pollution
Volume: 159
Issue number: 10
ISSN (Print): 0269-7491
Ratings:
Web of Science (2019): Indexed yes
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Scopus rating (2017): CiteScore 5 SJR 1.615 SNIP 1.46
Web of Science (2017): Impact factor 4.358
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 5.27 SJR 1.827 SNIP 1.74
Web of Science (2016): Impact factor 5.099
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): CiteScore 4.72 SJR 2.003 SNIP 1.75
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): CiteScore 4.57 SJR 1.987 SNIP 2.005
Web of Science (2014): Impact factor 4.143
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): CiteScore 4.35 SJR 1.976 SNIP 1.94
Web of Science (2013): Impact factor 3.902
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): CiteScore 4.03 SJR 2.038 SNIP 1.74
Web of Science (2012): Impact factor 3.73
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): CiteScore 3.87 SJR 2.041 SNIP 1.745