Agilent Technologies

Agilent J&W DB-1ht

A collection of citations to advance your research

Table of contents

[Environmental](#)

[Food testing and agriculture](#)

Environmental

Rapid and Extensive Debromination of Decabromodiphenyl Ether by Smectite Clay-Templated Subnanoscale Zero-Valent Iron

Environmental Science & Technology, **46**, 8969-8975 (2012)
Kai Yu *et al.*

Tags
DB-1ht, environmental, soil, sludges and sediments

Abstract
Subnanoscale zerovalent iron (ZVI) synthesized using smectite clay as a template was utilized to investigate reduction of decabromodiphenyl ether (DBDE). The results revealed that DBDE was rapidly debrominated by the prepared smectite-templated ZVI with a reaction rate 10 times greater than that by conventionally prepared nanoscale ZVI. This enhanced reduction is plausibly attributed to the smaller-sized smectite-templated ZVI clusters (0.5 nm) vs that of the conventional nanoscale ZVI (40 nm). The degradation of DBDE occurred in a stepwise debromination manner. Pentabromodiphenyl ethers were the terminal products in an alkaline suspension (pH 9.6) of smectite-templated ZVI, whereas di-, tri-, and tetrabromodiphenyl ethers formed at the neutral pH. The presence of tetrahydrofuran (THF) as a cosolvent at large volume fractions (e.g., >70%) in water reduced the debromination rates due to enhanced aggregation of clay particles and/or diminished adsorption of DBDE to smectite surfaces. Modification of clay surfaces with tetramethylammonium (TMA) attenuated the colsovent effect on the aggregation of clay particles, resulting in enhanced debromination rates. Smectite clay provides an ideal template to form subnanoscale ZVI, which demonstrated superior debromination reactivity with DBDE compared with other known forms of ZVIs. The ability to modify the nature of smectite clay surface by cation exchange reaction utilizing organic cations can be harnessed to create surface properties compatible with various contaminated sites.

Food testing and agriculture

Microbial Conversion of Arachidonic Acid to Arachidonyl Alcohol by a New Acinetobacter Species

Journal of the American Oil Chemical Society,
89, 1663-1671 (2012)
Toshihiro Nagao *et al.*

Tags
DB-1ht, DB-23, DB-5ms, 6890N GC, food testing and agriculture, food processing and packaging

Abstract
The wax ester content in oil materials extracted from a microbial culture was analyzed suing Agilent J&W GC columns fitted an Agilent 6890 GC. Published by Springer.

www.agilent.com/chem

Printed in the UK
21 October, 2014

5991-3384EN