

## GC/MS-SIM for the Determination of Alkylphenols, Chlorophenols and Bisphenol A in Paper Materials

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A method for the determination of alkylphenols, chlorophenols and bisphenol A in paper materials using GC/MS-SIM has been developed.

Eleven endocrine disrupting chemicals (EDCs) of phenols in paper samples were extracted with acetonitrile. Also, solid-phase extraction (SPE) with XAD-4 and subsequent conversion to isobutoxycarbonyl derivatives or *tert.*-butyldimethylsilyl derivatives for sensitive analysis with the selected ion-monitoring (SIM) mode.

The recoveries were 82.4~108.8 % by area ratio of pteranthrene-d<sub>10</sub> vs bisphenol A d<sub>16</sub>. (isoBOC derivatization and TBDMS derivatization)

The SIM responses were linear with the correlation coefficient varying 0.9717~0.9995 (isoBOC derivatization), and 0.9842~0.9980 (TBDMS derivatization). The range of concentrations was respectively, 0.95~1.44 ng/g in 2,4-dichlorophenol, 1.01~1.17 ng/g in t-butylphenol, 2.17~5.84 ng/g in pentachlorophenol, 12.68~14.88 ng/g in nonylphenol and 30.84~153.72 ng/g in bisphenol A.

key words : endocrine disrupting chemicals, solid-phase extraction, isoBOC derivatization method, TBDMS derivatization method