



PCBs

Detailed analysis of PCBs in sewage sludge

Application Note

Environmental

Authors

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Introduction

After clean up with TBA sulfite for the removal of sulfur containing compounds, samples are extracted over special Agilent SPE cartridges for PCB analysis. Separation is performed on a tailor-made capillary column, which gives a good separation between PCB 31 and 28, as well as of PCBs 52, 101, 153, 138 and 180 from other peaks in the sample. PCB 209 is used as internal standard (acc. to DIN 38414).



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Conditions

Sample Preparation : SPE
method:

Cartridge Type : Agilent Bond Elut PCB, 1000 mg/3 mL, Part no.
1210-5032

Analysis Technique : GC-ID < 0.53 mm

Column : Agilent CP-Sil 5/C18 CB for PCB, 0.25 mm x 50 m
(df = 0.1 µm) (Part no. CP7477)

Retention Gap : 0.53 mm id fused silica, methyl deactivated

Temperature : 90 °C (3 min) to 170 °C, 20 °C/min; hold 5 min;
170 °C to 215 °C, 2 °C/min; to 275 °C, 5 °C/min;
hold 20 min isothermal

Carrier Gas : He, (170 kPa)

Injector : On column

Detector : ECD, 320 °C

Sample Size : 3 µL

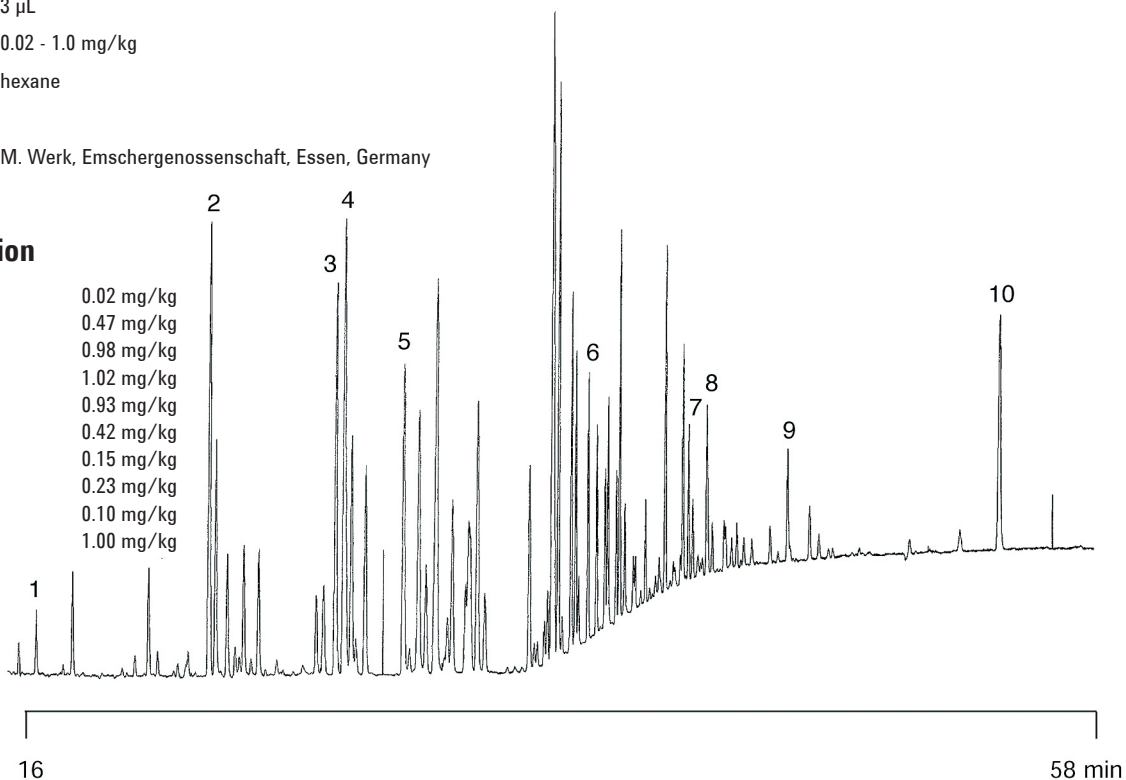
Concentration Range : 0.02 - 1.0 mg/kg

Sample Solvent : hexane

Courtesy : M. Werk, Emschergenossenschaft, Essen, Germany

Peak identification

1. pentachlorobenzene	0.02 mg/kg
2. hexachlorobenzene	0.47 mg/kg
3. PCB 31	0.98 mg/kg
4. PCB 28	1.02 mg/kg
5. PCB 52	0.93 mg/kg
6. PCB 101	0.42 mg/kg
7. PCB 153	0.15 mg/kg
8. PCB 138	0.23 mg/kg
9. PCB 180	0.10 mg/kg
10. PCB 209	1.00 mg/kg



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