Agilent Technologies

Agilent J&W DB-XLB

A collection of citations to advance your research

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Energy and chemicals

Stacked Injection with Low Thermal Mass Gas Chromatography for PPB Level Detection of Oxygenated Compounds in Hydrocarbons

Journal of Chromatographic Science, **44**, 219-226 (2006)
Jim Luong *et al.*

Tags
VF-35ms, VF-1ms, VF-5ms, VF-17ms, DB-XLB, DB-1701, 6890A GC, energy & chemicals, petrochemicals

Abstract
A range of Agilent J&W GC columns were found applicable for the analysis of oxygenated compounds in hydrocarbons. Published by Oxford University Press.

Environmental

PBDEs in indoor dust in South-Central China: Characteristics and implications

Chemosphere, **78**, 169-174 (2012)
Yumei Huang *et al.*

Tags
CP-Sil 13 CB, DB-XLB, 6890 GC, 5975 MS, environmental, soil, sludges & sediments

Abstract
House dust was analyzed for polybrominated diphenyl ethers using Agilent J&W GC columns and GC/MS with detection limits of a signal/noise ratio >3, with 0.5 to 2.0 pg for BDE28–183 on an Agilent J&W DB-XLB and 50 pg for BDE209 on an Agilent CP-Sil 13 CB. Published by Elsevier B. V.

PBDEs in sediments of the Beijiang River, China: Levels, distribution, and influence of total organic carbon

Chemosphere, **76**, 226-231 (2009)
Laiguo Chen *et al.*

Tags
CP-Sil 13 CB, DB-XLB, 6890 GC, 5975 MS, environmental, soil, sludges & sediments

Abstract
River sediments were analyzed for polybrominated diphenyl ethers using Agilent J&W GC columns and GC/MS with detection limits of a signal/noise ratio >3, with 0.5 to 2.0 pg for BDE28–183 on an Agilent J&W DB-XLB and 50 pg for BDE209 on an Agilent CP-Sil 13 CB. Published by Elsevier B. V.

Influence of matrix on suitability of four methods for organochlorine pesticide analysis in water

International Journal of Environmental Analytical Chemistry, **93**, 416-433 (2013)
Estefanía Concha-Graña *et al.*

Tags
DB-XLB, environmental, water analysis

Abstract
The monitoring of organochlorine pesticides has raised a great concern in the last years due to their toxicity (some of them are carcinogenic and endocrine disruptor compounds) and persistence. European Directive 2008/105/EC establishes very restrictive levels for organochlorine pesticides in surface waters. Therefore, simple, fast, highly sensitive and low cost analytical methods are required to detect and quantify these pollutants in water. In the present work, four procedures for extraction and determination are proposed and compared for the analysis of 28 organochlorine pesticides in tap, surface and sea waters. The suitability of each method of analysis was evaluated for each kind of water. The extraction methods proposed were: two solid-phase extraction methods using C_{18} laminar disk and Oasis HLB cartridges, a solid-phase microextraction procedure using a polydimethylsiloxane/divinylbenzene (PDMS/DVB) fibre, and a micro liquid–liquid extraction procedure using ethyl acetate as solvent. Determination of pesticides was performed by large volume on-column injector-gas chromatography-electron capture detection (LVOCI-GC-ECD), splitless-GC-ECD and GC-MS (mass spectrometry). All methods present a good sensitivity with method detection limits lower than 10 ng L^{-1}, good accuracy with recoveries between 75 and 120% (with some exceptions) and good precision (relative standard deviations <15%), according to the Commission Decision 2002/657/EC criteria. The advantages and disadvantages of each method are discussed in terms of the green chemistry principles, the figures of merit and the matrix effect. This work tries to be a useful guidance for routine and control analysis laboratories. © 2012 Taylor & Francis

Food testing and agriculture

The effect of co-occurring polychlorinated biphenyls on quantitation of toxaphene in fish tissue samples by gas chromatography negative ion mass spectrometry

Journal of Chromatography A, **1270**, 262-268 (2012)
Wenjian Lao, David Tsukada Keith A. Maruya

Tags
DB-XLB, 7890 GC, 5957C MSD, food testing & agriculture, pesticides

Abstract
GC-NCI/MS analysis of fish extracts was carried out on an Agilent J&W DB-XLB column fitted to an Agilent 7890/5975C GC/MSD via a two-way effluent splitter. Published by Elsevier B. V.

Materials testing and research

Chemical Composition of French Mimosa Absolute Oil

Journal of Agricultural and Food Chemistry, **58**, 1844-1849 (2010)
Rodolphe Perriot *et al.*

Tags
HP-20M, HP-1, DB-1, DB-XLB, 5890A GC, 6890N GC, 5973 MS, 5971 MS, materials testing & research, consumer products

Abstract
Since decades mimosa (*Acacia dealbata*) absolute oil has been used in the flavor and perfume industry. Today, it finds an application in over 80 perfumes, and its worldwide industrial production is estimated five tons per year. Here we report on the chemical composition of French mimosa absolute oil. Straight-chain analogues from C6 to C26 with different functional groups (hydrocarbons, esters, aldehydes, diethyl acetals, alcohols, and ketones) were identified in the volatile fraction. Most of them are long-chain molecules: (*Z*)-heptadec-8-ene, heptadecane, nonadecane, and palmitic acid are the most abundant, and constituents such as 2-phenethyl alcohol, methyl anisate, and ethyl palmitate are present in smaller amounts. The heavier constituents were mainly triterpenoids such as lupenone and lupeol, which were identified as two of the main components. (*Z*)-Heptadec-8-ene, lupenone, and lupeol were quantified by GC–MS in SIM mode using external standards and represents 6%, 20%, and 7.8% (*w*/*w*) of the absolute oil. Moreover, odorant compounds were extracted by SPME and analyzed by GC-sniffing leading to the perception of 57 odorant zones, of which 37 compounds were identified by their odorant description, mass spectrum, retention index, and injection of the reference compound.

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