



Agilent Technologies

Agilent J&W CP-Sil 5 CB

A collection of citations to advance your research

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Energy and chemicals

[Iron Particle Size Effects for Direct Production of Lower Olefins from Synthesis Gas](#)

Journal of the American Chemical Society, **134**,
16207-16215 (2012)
Hirsa M. Torres Galvis *et al.*

Tags
CP-Sil 5 CB, DB-17, GS-GasPro, 7890 GC, energy
and chemicals, natural gas

Abstract

The Fischer–Tropsch synthesis of lower olefins (FTO) is an alternative process for the production of key chemical building blocks from non-petroleum-based sources such as natural gas, coal, or biomass. The influence of the iron carbide particle size of promoted and unpromoted carbon nanofiber supported catalysts on the conversion of synthesis gas has been investigated at 340–350 °C, H₂/CO = 1, and pressures of 1 and 20 bar. The surface-specific activity (apparent TOF) based on the initial activity of unpromoted catalysts at 1 bar increased 6–8-fold when the average iron carbide size decreased from 7 to 2 nm, while methane and lower olefins selectivity were not affected. The same decrease in particle size for catalysts promoted by Na plus S resulted at 20 bar in a 2-fold increase of the apparent TOF based on initial activity which was mainly caused by a higher yield of methane for the smallest particles. Presumably, methane formation takes place at highly active low coordination sites residing at corners and edges, which are more abundant on small iron carbide particles. Lower olefins are produced at promoted (stepped) terrace sites that are available and active, quite independent of size. These results demonstrate that the iron carbide particle size plays a crucial role in the design of active and selective FTO catalysts. Reprinted with permission from the *Journal of the American Chemical Society* © 2012 American Chemical Society.

Environmental

[Modern and Fossil Contributions to Polycyclic Aromatic Hydrocarbons in PM2.5 from North Birmingham, Alabama in the Southeastern U.S.](#)

Environmental Science & Technology, **46**, 1422-1429 (2012)
Li Xu *et al.*

Tags
CP-Sil 5 CB, HP-5ms, 6890 GC, 5973 MS,
environmental, air analysis

Abstract

Analyzing the radiocarbon (^{14}C) content of polycyclic aromatic hydrocarbons (PAHs) in atmospheric particulate matter can provide estimates on the source contributions from biomass burning versus fossil fuel. The relative importance of these two sources to ambient PAHs varies considerably across regions and even countries, and hence there is a pressing need to apportion these sources. In this study, we advanced the radiocarbon analysis from bulk carbon to compound class specific radiocarbon analysis (CCSRA) to determine $\Delta^{14}\text{C}$ and $\delta^{13}\text{C}$ values of PAHs in PM_{2.5} samples for investigating biomass burning and fossil fuel source contributions to PAHs from one of the Southeastern Aerosol Research and Characterization (SEARCH) sites in North Birmingham (BHM), Alabama during winter (December 2004-February 2005) and summer (June-August 2005) by accelerator mass spectrometry. To compare our ambient samples to known sources, we collected and analyzed fenceline samples from the vicinity of a coke plant in BHM. As expected, PAHs from the coke plant fenceline samples had very low radiocarbon levels. Its $\Delta^{14}\text{C}$ varied from -990 to -970‰ , indicating that 97 to 99% were of fossil source. PAHs in the ambient PM_{2.5} had $\Delta^{14}\text{C}$ from -968 to -911‰ , indicating that 92–97% of PAHs were from fossil fuel combustion. These levels indicated the dominance of fossil sources of ambient PAHs. The radiocarbon level of ambient PAHs was higher in winter than in summer. Winter samples exhibited depleted $\delta^{13}\text{C}$ value and enriched $\Delta^{14}\text{C}$ value because of the increased contribution of PAHs from biomass burning source. However, biomass burning contributed more to heavier PAHs (modern source accounting for 6–8%) than lighter ones with a modern contribution of 3%. Reprinted with permission from Environmental Technology © 2012 American Chemical Society.

[Analysis of Endocrine Disrupting Pesticides by Capillary GC with Mass Spectrometric Detection](#)

International Journal of Environmental Research **Tags**

and Public Health, **9**, 3166-3196 (2012)

Eva Matisová , Svetlana Hrouzková

Bond Elut ENV, HP-5ms, CP-Sil 5 CB,
environmental, water analysis

Abstract

Endocrine disrupting chemicals, among them many pesticides, alter the normal functioning of the endocrine system of both wildlife and humans at very low concentration levels. Therefore, the importance of method development for their analysis in food and the environment is increasing. This also covers contributions in the field of ultra-trace analysis of multicomponent mixtures of organic pollutants in complex matrices. With this fact conventional capillary gas chromatography (CGC) and fast CGC with mass spectrometric detection (MS) has acquired a real importance in the analysis of endocrine disrupting pesticide (EDP) residues. This paper provides an overview of GC methods, including sample preparation steps, for analysis of EDPs in a variety of matrices at ultra-trace concentration levels. Emphasis is put on separation method, mode of MS detection and ionization and obtained limits of detection and quantification. Analysis time is one of the most important aspects that should be considered in the choice of analytical methods for routine analysis. Therefore, the benefits of developed fast GC methods are important. Published by MDPI.

[Absolute configuration of anabasine from *Messor* and *Aphaenogaster* ants](#)

Journal of Chemical Ecology, **27**, 945-952 (2001) **Tags**

S. Leclerq *et al.*

CP-Chirasil Val, CP-Sil 5 CB, Environmental

Abstract

A method was developed to analyze alkaloid anabasines from ants, using an Agilent J&W CP-Sil 5 CB column. Published by Springer B. V.

Food testing and agriculture

[Purification of vetiver alcohols and esters for quantitative high-performance thin-layer chromatography determination in Haitian vetiver essential oils and vetiver acetates](#)

Journal of Chromatography A, **1241**, 103-111
(2012)
Lionel Paillat *et al.*

Tags

VF-WAXms, VF-1ms, DB-WAX, CP-Sil 5 CB, CP-WAX 52 CB, 7890 GC, 5975C MSD, 6890N GC, 5973N MS, food testing and agriculture, dietary supplements, natural compounds and additives

Abstract

GC/MS and comprehensive GC × GC/MS analysis, using a range of Agilent J&W GC columns fitted to different Agilent GC/MS systems, was used to quantify alcohols and acetates in Haitian vetiver essential oils. Published by Elsevier B. V.

[Direct analysis of intact glycidyl fatty acid esters in edible oils using gas chromatography–mass spectrometry](#)

Journal of Chromatography A, **1313**, 202-211
(2013)
Herrald Steenbergen *et al.*

Tags

DB-5ms, CP-Sil 5 CB, Ultra Inert liner, Lichrosorb 5 Diol, 7890A GC, 5975C MSD, food testing and agriculture, food processing and packaging

Abstract

GC/MS analysis of glycidyl fatty acid esters in edible oils was accomplished using an Agilent J&W DB-5ms column fitted to an Agilent GC/MS system. An Agilent J&W CP-Sil 5 CB GC column was used to analyze the esters by GC/FID. Purification of the esters from the lipid matrix using normal phase LC with two Agilent Lichrosorb 5 Diol columns Published by Elsevier B. V.

Forensics and toxicology

[Analytical methods for abused drugs in hair and their applications](#)

Analytical and Bioanalytical Chemistry, **397**,
1039-1067 (2010)
Mitsuhiro Wada *et al.*

Tags
DB-5, DB-5ms, HP-5, HP-5ms, CP-Sil 5 CB,
ZORBAX SB-Phenyl, ZORBAX Eclipse XDB-C18,
Bond Elut Certify, forensics and toxicology,
criminalistics

Abstract

A comprehensive review of drug extraction methods described the use of many Agilent products, including Bond Elut Certify for sample extraction, Agilent J&W DB-5, DB-5ms, HP-5, HP-5ms, and CP-Sil 5 CB GC columns, and Agilent ZORBAX StableBond SB-Phenyl and ZORBAX Eclipse XDB-C18 LC columns. Published by Springer.

Small molecule pharmaceuticals and generics

[Direct measurement of part-per-billion levels of dimethyl sulfoxide in water by gas chromatography with stacked injection and chemiluminescence detection](#)

Journal of Separation Science, **35**, 1486-1493
(2012)
Jim Luong *et al.*

Tags
HP-1ms Ultra Inert, CP-Volamine, CP-Sil 5 CB,
PoraBOND Q, VF-5ms, VF-1ms, VF-1701ms,
VF-WAXms, 6890, 7890A, 7683B, small molecule
pharmaceuticals and generics

Abstract

A range of Agilent J&W GC columns and instruments were used in a comprehensive investigation of DMSO in water. Published by John Wiley and Sons Ltd.

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The Measure  of Confidence

